

CRPL-F142 PART A

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PART A
IONOSPHERIC DATA

ISSUED
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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955). Also, beginning with January 1956, additional meanings are assigned to T: A smoothed value which better fits the observations, replacing a doubtful or clearly inconsistent observed value; and to U: f_oF2 minus f_oF1 is 0.5 Mc or less (used with $(M3000)F2$).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of f_oF2 (and f_oE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of $h'F2$ (and $h'E$ near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For f_oF2 , as equal to or less than f_oF1 .
2. For $h'F2$, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

At night B for fEs is counted on the low side when there is a numerical value of foF2; otherwise it is omitted from the median count.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice

in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

- a. Differences in scaling records when spread echoes are present.
- b. Omission of values when f_oF_2 is less than or equal to f_oF_1 , leading to erroneously high values of monthly averages or median values.
- c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of f_oE . Blank spaces at the beginning and end of columns of $h'F_1$, f_oF_1 , $h'E$, and f_oE are usually the result of diurnal variation in these characteristics. Complete absence of medians of $h'F_1$ and f_oF_1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
December		42	11	15	33	53	86	108	114	126	85
November	147	35	10	16	38	52	87	112	115	124	83
October	135	31	10	17	43	52	90	114	116	119	81
September	119	30	8	18	46	54	91	115	117	121	79
August	105	27	8	18	49	57	96	111	123	122	77
July	95	22	8	20	51	60	101	108	125	116	73
June	89	18	9	21	52	63	103	108	129	112	67
May	77	16	10	22	52	68	102	108	130	109	67
April	68	13	10	24	52	74	101	109	133	107	62
March	60	14	11	27	52	78	103	111	133	105	51
February	53	14	12	29	51	82	103	113	133	90	46
January	48	12	14	30	53	85	105	112	130	88	42

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	72	

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 60 and figures 1 to 120 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina

Commonwealth of Australia, Ionospheric Prediction Service of the
Commonwealth Observatory:
Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral
Resources, Geology and Geophysics:
Watheroo, Western Australia

University of Graz:
Graz, Austria

British Department of Scientific and Industrial Research, Radio
Research Board:
Falkland Is.
Ibadan, Nigeria (University College of Ibadan)
Inverness, Scotland
Port Lockroy
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada

Radio Wave Research Laboratories, National Taiwan University, Tai-
peh, Formosa, China:
Formosa, China

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Indian Council of Scientific and Industrial Research, Radio Research
Committee, New Delhi, India:
Ahmedabad (Physical Research Laboratory)
Bombay (All India Radio)
Calcutta (Institute of Radio Physics and Electronics)
Delhi (All India Radio)
Kodaikanal (India Meteorological Department)
Madras (All India Radio)
Tiruchy (Tiruchirapalli), (All India Radio)

Christchurch Geophysical Observatory, New Zealand Department of
Scientific and Industrial Research:
Christchurch, New Zealand
Rarotonga, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom,
Norway:
Oslo, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Nairobi, Kenya (East African Meteorological Department)

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm,
Sweden:
Lulea, Sweden

United States Army Signal Corps:
Adak, Alaska
Ft. Monmouth, New Jersey
Okinawa I.
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Panama Canal Zone
Point Barrow, Alaska
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 61 through 71 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

The interpretation of a cell is as follows: U F
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The U is a weight meaning doubtful. Other weights are I, interpolated, D, greater than, and E, less than. Absence of a letter in the upper left position means full weight is given to the observation.

Symbols such as F above are given in the upper right position.

There should be no difficulty in the placing of the decimal point. For the time being, a final zero will be found in each value of foF1 and foE. Thus at a later date it will be possible to register more closely scaled values of these characteristics, whenever such are reported.

TABLES OF IONOSPHERIC DATA

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Table 1

Washington, D. C. (38.7°N, 77.1°W)

May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.3					3.6	2.70
01	280	5.9					3.0	2.70
02	280	5.4					2.9	2.75
03	290	5.0					2.9	2.70
04	280	4.5					2.6	2.75
05	280	4.7	---	---	---	---	1.6	2.90
06	280	5.6	250	3.70	112	2.4	2.4	3.00
07	320	6.4	230	4.30	109	2.8	4.3	3.00
08	380	6.4	220	4.50	105	3.2	4.7	2.90
09	330	6.8	210	4.80	103	3.4	4.5	2.90
10	380	7.3	200	5.00	101	3.6	4.4	2.80
11	360	7.2	205	5.20	101	3.7	4.0	2.80
12	380	7.2	210	5.30	102	3.8	4.0	2.70
13	380	7.2	215	5.20	105	3.7	4.1	2.75
14	370	7.8	220	5.20	105	3.8	4.0	2.70
15	350	7.8	220	5.20	105	3.6	3.9	2.80
16	335	7.8	230	4.80	109	3.3	3.4	2.80
17	310	8.1	235	4.40	109	3.0	3.0	2.80
18	280	7.7	250	3.80	117	2.4	2.7	2.80
19	260	8.4			---	---	1.9	2.90
20	250	7.8					2.9	2.80
21	250	7.4					3.2	2.80
22	270	6.8					3.7	2.75
23	280	6.5					(3.8)	2.75

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Kiruna, Sweden (67.8°N, 20.3°E)

April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	355	5.6					5.0	(2.55)
01	340	5.0					5.0	(2.5)
02	350	(5.3)					5.0	(2.5)
03	360	5.1					4.0	2.65
04	305	5.0	---	---	110	1.5	2.2	2.8
05	300	5.8	260	---	110	2.0		2.7
06	(345)	6.0	250	3.6	110	2.5		2.7
07	375	6.0	240	4.2	110	2.6		2.8
08	(410)	6.3	230	4.4	105	3.0		2.75
09	330	7.0	230	4.8	105	3.1		2.7
10	350	7.8	225	4.9	105	3.1		2.8
11	355	8.0	220	5.0	105	3.2	<3.8	2.7
12	365	8.0	220	4.7	105	3.2	3.5	2.7
13	(425)	8.0	220	4.8	105	3.1	<3.5	2.7
14	350	7.8	225	4.5	105	3.1	<4.0	2.7
15	325	7.5	230	4.4	105	3.0	<3.5	2.8
16	(285)	7.3	240	---	105	2.8		2.8
17	(280)	7.0	250	---	110	2.5		2.9
18	295	7.0	260	---	110	2.1	3.0	2.9
19	310	6.0	---	---	110	1.8	<4.0	2.8
20	290	6.0			---	---	<4.0	2.8
21	340	5.5			---	---	4.5	(2.7)
22	390	5.5					4.2	2.6
23	370	5.5					5.0	(2.55)

Time: 15.0°E.

Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 3

Oslo, Norway (60.0°N, 11.1°E)

April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.4					<1.4	2.50
01	305	(5.3)					<1.3	(2.40)
02	310	(4.8)					<1.1	(2.55)
03	320	4.2					<1.2	2.50
04	300	3.8					<1.2	2.50
05	295	4.6	---	---	110	1.4		2.70
06	270	5.3	255	---	110	2.0		2.85
07	(270)	6.0	245	---	110	2.6		2.80
08	370	6.4	240	4.1	110	2.9		2.75
09	340	6.8	240	4.4	110	3.1		2.70
10	350	7.2	240	4.6	110	3.4		2.70
11	350	7.6	225	4.7	110	3.4		2.70
12	350	7.8	220	4.9	110	3.5		2.70
13	370	7.8	225	4.8	110	3.4		2.70
14	360	8.0	230	4.9	110	3.4		2.75
15	330	8.0	230	---	110	3.2		2.75
16	295	8.0	245	---	110	3.0		2.80
17	(250)	8.4	250	---	110	2.8		2.85
18	250	8.0	250	---	110	2.3		2.90
19	255	7.8			---	1.8	<2.0	2.90
20	255	7.5					<1.4	2.90
21	255	6.8					<1.4	2.75
22	270	6.2					<1.4	2.60
23	300	5.0					<1.4	2.50

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 4

Uppsala, Sweden (59.8°N, 17.6°E)

April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	315	4.7						2.55
01	320	4.5						2.6
02	330	4.2						2.5
03	330	3.8			---	---	2.4	2.6
04	310	3.9			---	E		2.6
05	275	4.6	---	---	---	1.6		2.8
06	290	5.5	260	3.7	115	2.2	2.3	2.7
07	310	6.0	240	4.2	110	2.7	2.9	2.8
08	350	6.7	240	4.6	110	3.0	3.0	2.7
09	350	7.2	235	5.0	105	3.2		2.7
10	345	7.7	230	5.0	105	3.2	3.4	2.7
11	340	7.9	225	5.0	105	3.4		2.7
12	340	8.2	220	5.2	105	3.4		2.7
13	335	8.2	225	5.2	105	3.4		2.7
14	340	8.2	230	5.0	105	3.2		2.7
15	330	8.0	230	4.7	105	3.2		2.8
16	290	8.2	240	4.6	105	3.0		2.7
17	265	8.4	250	4.1	110	2.6	2.9	2.8
18	260	8.2	---	---	115	2.1		2.8
19	255	7.7			---	1.6	1.9	2.8
20	245	7.1			---	E		2.8
21	260	6.7			---	---		2.7
22	280	5.8						2.7
23	300	5.4						2.7

Time: 15.0°E.

Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 5

Adak, Alaska (51.9°N, 176.6°W)

April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.8						2.5
01	330	4.6						2.5
02	320	4.6						2.45
03	330	4.2						2.4
04	350	4.2					1.1	2.45
05	310	4.6	320	3.0	---	---		2.5
06	340	5.9	265	3.8	113	(2.4)	2.4	2.55
07	360	6.4	250	4.5	110	(2.9)	3.0	2.6
08	380	6.6	240	4.8	109	(3.2)	3.6	2.6
09	350	7.0	230	4.8	105	(3.4)	4.3	2.7
10	420	7.4	220	5.0	104	---	4.3	2.6
11	390	7.6	220	5.2	101	---	4.4	2.6
12	340	8.0	220	5.2	101	---	4.4	2.7
13	350	8.5	225	(5.4)	---	---		2.7
14	330	8.4	230	(5.1)	100	---		2.0
15	330	8.6	240	---	102	---	2.7	2.8
16	280	8.5	240	---	107	(3.0)	2.85	2.9
17	250	8.4	240	---	109	(2.8)	2.8	2.9
18	250	8.4			115	(2.2)	2.5	2.95
19	250	7.9					2.4	2.9
20	250	7.2						2.85
21	250	6.6						2.8
22	270	5.6						2.65
23	290	5.2						2.55

Time: 100.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 6

Graz, Austria (47.1°N, 15.5°E)

April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.9						
01	320	6.7						
02	315	6.2						
03	330	5.6						
04	310	5.4						
05	330	5.4						
06	250	6.2	---	(3.5)				
07	250	7.0	250	4.2				
08	250	7.6	230	4.9	---	(3.4)		
09	300	8.6	220	5.0	---		3.6	
10	300	9.4	215	5.3	---		3.7	
11	300	10.1	230	5.1	---		3.9	
12	305	10.6	230	5.4	---	(3.9)		
13	300	10.5	220	5.2	---		3.9	
14	300	10.4	220	5.2	---		3.8	
15	250	10.2	230	5.1	---		3.6	
16	240	10.0	240	(4.5)	---			
17	250	9.7	---	(4.0)				
18	250	9.4		(2.4)				
19	250	9.0						
20	260	8.4						
21	280	7.8						
22	300	7.0						
23	330	7.0						

Time: 15.0°E.

Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 7

Pt. Monmouth, New Jersey (40.3°N, 74.1°W)								April 1956
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.6						2.70
01	290	(6.4)						2.70
02	290	(6.2)					(3.2)	(2.70)
03	280	5.8						2.70
04	300	(5.2)					(3.4)	2.70
05	280	(5.0)					(3.1)	(2.85)
06	250	6.0	---	---	120	<2.0		3.05
07	260	6.9	240	---	111	(2.8)	2.8	3.00
08	260	8.3	225	4.5	110	(3.2)	3.2	3.00
09	280	9.0	215	4.9	109	(3.4)	3.5	2.85
10	290	9.3	210	5.1	109	(3.7)	3.7	2.90
11	330	9.6	210	5.4	109	(3.8)		2.75
12	330	10.0	215	5.3	109	(3.8)		2.00
13	330	10.5	220	5.4	109	(3.8)		2.75
14	320	10.1	220	5.2	109	3.7		2.75
15	320	9.6	225	5.0	111	(3.5)	3.6	2.75
16	300	9.0	230	4.0	111	(3.3)		2.00
17	260	9.5	250	---	119	(2.8)	3.0	2.85
18	260	9.6	270	---	121	<1.6		2.90
19	250	9.2					(3.1)	2.85
20	260	8.0					(3.7)	2.80
21	270	7.7						2.80
22	280	7.3					(2.8)	2.75
23	280	(7.0)					(3.2)	2.70

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Okinawa I. (26.3°N, 127.0°E)								April 1956
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	12.2						2.90
01	260	12.0						3.00
02	240	11.0						3.05
03	220	8.6						3.00
04	240	7.1						2.75
05	270	6.8						2.70
06	280	7.0						2.75
07	240	9.2	---	---	117	2.4	3.5	3.05
08	240	10.6	235	---	111	(3.1)	4.9	3.05
09	<260	11.6	230	---	111	3.5	5.6	2.85
10	(270)	12.4	220	---	111	3.7	5.4	2.75
11	---	13.6	225	---	111	3.9	5.6	2.00
12	340	14.9	225	---	111	(3.9)	5.1	2.75
13	340	15.4	230	---	111	4.0	5.3	2.75
14	360	15.4	230	---	111	3.9	5.2	2.70
15	340	16.1	230	---	114	3.8	4.7	2.65
16	320	16.1	230	---	113	3.5	4.2	2.70
17	290	16.3	240	---	115	3.1	4.3	2.80
18	250	15.0	250	---	119	2.4	3.8	2.90
19	250	14.4					3.3	2.80
20	260	13.0					3.0	2.60
21	300	13.7					3.0	2.60
22	300	12.4					2.4	2.65
23	290	12.0					2.5	2.75

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Panama Canal Zone (9.4°N, 79.9°W)								April 1956
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	10.2						2.90
01	240	8.9						2.90
02	240	8.2						2.90
03	250	7.6						2.80
04	260	7.2					2.3	2.80
05	250	6.6					1.9	2.80
06	280	6.2					2.5	2.80
07	250	8.8	---	---	121	2.4	3.0	3.00
08	250	10.6	235	---	(117)	(3.0)	3.7	2.90
09	(280)	11.5	230	---	115	(3.5)	3.6	2.85
10	(280)	12.3	225	(5.4)	115	(3.8)	4.2	2.75
11	(280)	12.8	220	(5.7)	(111)	(4.0)	4.8	2.70
12	(290)	13.6	215	5.7	111	(4.0)	4.8	2.65
13	(300)	14.3	215	(5.7)	111	4.0	5.0	2.70
14	(300)	14.3	220	(5.4)	111	3.9	4.8	2.70
15	(300)	14.4	220	---	109	3.7	5.0	2.70
16	(320)	14.0	230	---	111	3.4	4.7	2.70
17	(265)	13.1	240	---	115	2.8	4.3	2.70
18	260	(12.6)	250	---	---	---	3.2	(2.75)
19	270	(12.6)					2.9	(2.70)
20	270	(12.8)					2.2	(2.80)
21	250	(11.5)						(2.75)
22	250	(11.0)						(2.80)
23	250	10.4						2.90

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

White Sands, New Mexico (32.3°N, 106.5°W)								April 1956
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	6.0						2.7
01	300	6.2						2.9
02	290	6.0						2.65
03	290	5.8						2.65
04	280	5.7						2.4
05	280	5.5	---	---	---	---		2.3
06	255	6.2	305	---	---	---		2.2
07	250	7.8	240	3.9	111	(2.7)		2.8
08	270	8.8	220	4.6	109	(3.0)		4.4
09	270	9.0	215	4.6	107	3.4		4.5
10	300	10.3	210	(5.0)	109	(3.5)		4.1
11	305	11.0	210	5.4	109	(3.8)		4.0
12	320	11.4	210	5.4	109	(3.9)		2.65
13	330	11.8	215	5.6	111	(3.8)		3.8
14	320	12.0	230	(5.5)	109	(3.7)		3.0
15	320	11.7	230	(5.1)	109	(3.3)		3.9
16	290	11.4	230	---	109	3.1		3.7
17	250	10.8	240	---	111	(2.0)		3.8
18	250	10.4	270	---	(119)	(1.9)		3.3
19	240	9.2						3.4
20	<240	7.0						3.5
21	250	7.0						2.7
22	280	6.4						3.1
23	300	6.2						3.4

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Formosa, China (25.0°N, 121.5°E)								April 1956
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	13.7					<1.7	(2.8)
01	260	12.0					<1.7	3.0
02	240	10.3					<1.7	3.0
03	---	---						
04	---	---						
05	---	---						
06	---	---						
07	---	---						
08	250	11.6	240	---	120	3.3	3.9	2.9
09	(260)	12.6	230	---	120	3.7	<4.1	2.7
10	(260)	13.7	---	---	---	---	<4.9	2.7
11	(270)	15.4	---	---	---	---	<5.0	2.6
12	(280)	>16.2	---	---	---	---	<5.2	2.6
13	(270)	>16.4	---	---	---	---	<5.0	2.7
14	(280)	>16.8	---	---	---	---	<4.9	(2.7)
15	(270)	(17.1)	240	---	---	---	4.1	(2.7)
16	(280)	17.0	240	---	---	---	<3.9	(2.7)
17	280	>16.5	250	---	---	---	3.6	(2.8)
18	280	>16.2					3.2	(2.8)
19	280	>14.5					2.9	(2.8)
20	280	>15.8					2.5	(2.6)
21	300	(14.8)					2.6	(2.7)
22	280	>14.9					2.4	(2.75)
23	280	>14.0					<1.7	(2.9)

Time: 120.0°E.

Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 12

Point Barrow, Alaska (71.3°N, 156.8°W)								March 1956
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00							6.6	(2.70)
01	(4.6)						5.0	(2.70)
02	(4.4)						4.6	(2.70)
03	(4.2)						5.0	(2.50)
04	(3.9)						3.3	(2.60)
05	(4.0)						3.1	(2.50)
06	(4.1)						3.2	(2.55)
07	(4.8)						3.4	(2.75)
08	(5.1)				113	(2.0)	2.8	(2.70)
09	(5.6)						3.3	(2.65)
10	5.6						3.2	2.85
11	6.0				113	2.7		2.80
12	(6.0)				117	2.8		2.85
13	6.4				113	2.8		2.75
14	7.0				119	2.7		2.85
15	8.0				115	2.5		2.80
16	7.8				121	2.4		2.85
17	(7.5)				115	2.2		(2.90)
18	(7.0)				113	1.8		(2.90)
19	(5.1)						2.5	(2.85)
20	(4.7)						3.8	(2.80)
21	(4.6)						3.6	(2.75)
22	(4.3)						4.0	(2.70)
23	(4.2)						4.3	(2.60)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Thule, Greenland (77.0°N, 69.0°W) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(3.7)						----
01		(3.8)						----
02		(3.4)						----
03		---						----
04		---						----
05		---						----
06		(2.6)						----
07		(3.6)						----
08		(4.2)						----
09		(4.5)						(3.20)
10		(4.8)			---	---		(3.10)
11		(4.5)			---	---		(3.00)
12		(5.4)			---	---		---
13		(5.9)			---	---		(3.00)
14		(6.3)			---	---		(3.05)
15		(6.8)			---	---		(2.95)
16		(5.4)			---	---		---
17		(5.0)						(3.10)
18		(4.8)						---
19		(4.9)						(3.00)
20		(4.2)						(2.90)
21		(5.4)						---
22		(4.0)					2.0	---
23		(3.8)						---

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Point Barrow, Alaska (71.3°N, 156.0°W) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---						5.8
01		---						5.4
02		(3.0)						4.7
03		---						4.5
04		---						3.7
05		---						4.0
06		(3.6)						3.2
07		(3.9)						3.8
08		(4.0)						4.2
09		(4.8)			---	---		3.6 (2.80)
10		(5.7)			---	---		3.4 (3.20)
11		(6.0)			117	---		(3.05)
12		6.4			121	2.5		3.05
13		6.8			121	2.2		3.00
14		7.4			125	2.2		3.00
15		7.6			125	1.9		(3.00)
16		(7.2)			113	---		3.15
17		(6.7)						(3.05)
18		(5.2)						(3.10)
19		(3.8)					2.1	---
20		(2.9)					2.8	(2.95)
21		(3.3)					3.5	---
22		(3.6)					3.6	---
23		---					4.0	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Lulea, Sweden (65.6°N, 22.1°E) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	---						---
01	320	---						---
02	320	---						---
03	310 (3.1)							---
04	310 (2.5)							---
05	295 (2.5)							---
06	300 2.6							---
07	270 4.2				---	---		(3.15)
08	245 5.0				---	1.8		3.2
09	240 6.3			2.3	145	2.0		3.2
10	235 7.0			2.5	---	2.0		3.2
11	240 7.2			2.6	---	2.0		3.3
12	240 7.6			2.6	---	2.2		(3.2)
13	235 7.3			2.5	---	2.1		(3.2)
14	235 7.6			2.4	---	2.0		---
15	240 7.4			2.2	140	1.8		---
16	225 (6.8)			---	---	1.8		---
17	230 (5.0)							---
18	230 4.5							(3.4)
19	250 4.4							(2.9)
20	275 4.0							---
21	300 (3.7)							---
22	305	---						---
23	330	---						---

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 6 minutes, automatic operation.

Table 16

Baker Lake, Canada (64.3°N, 96.0°W) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.9			120	---	6.0	2.9
01	270	3.3			---	1.1	5.0	2.9
02	280	3.7			135	1.2	5.0	2.9
03	280	3.3			140	1.1	5.0	2.9
04	290	3.3			130	1.2	5.0	2.8
05	300	3.2			125	1.5	5.0	2.8
06	300	3.3			130	1.4	4.1	2.85
07	310	3.5			130	1.9	5.0	2.8
08	310	3.9			120	2.2	4.4	3.0
09	300	4.4	270		120	2.8	4.9	3.0
10	280	5.2	270	3.9	120	2.8	3.9	3.05
11	300	6.2	250	3.9	120	3.0	3.2	3.0
12	280	6.6	260	4.0	125	3.1	3.2	3.0
13	280	7.2	260	4.0	120	2.9	3.1	3.0
14	280	7.9	250	3.6	120	2.8	3.0	2.9
15	270	7.1	260	3.4	130	2.6	2.8	3.0
16	250	6.7	---	---	125	2.5	3.6	3.0
17	270	5.8			130	2.1	4.4	3.0
18	270	5.0			125	2.0	5.0	2.9
19	280	4.4			125	2.0	4.1	3.0
20	270	4.6			130	1.5	5.0	3.0
21	270	4.2			120	1.3	5.0	3.0
22	270	4.2			115	1.4	6.5	2.9
23	270	4.0			120	1.2	5.6	3.0

Time: 90.0°W.
Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 17

De Bilt, Holland (52.1°N, 5.2°E) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6						2.6
01	295	3.2						2.5
02	300 (3.1)							2.7
03	300 (3.0)							2.5
04	290 (2.8)							2.7
05	280 (2.5)							2.7
06	260 2.8							2.75
07	225 4.8				125	1.9		3.2
08	220 6.8				110	2.2		3.3
09	220 7.6				105	2.7		3.25
10	225 8.6				105	3.0		3.2
11	230 8.6				105	3.1		3.2
12	240 9.2				105	3.2		3.2
13	235 8.8				105	3.1		3.1
14	240 8.9				105	3.0		3.25
15	225 9.1				110	2.7		3.2
16	220 8.5				115	2.2		3.2
17	210 7.1				125	1.9		3.2
18	215 6.4							3.2
19	225 5.3							3.1
20	250 4.0							2.9
21	280 3.8							2.7
22	300 3.7							2.65
23	290 3.6							2.65

Time: 0.0°.
Sweep: 0.8 Mc to 20.0 Mc in 20 seconds.

Table 18

Baguio, P. I. (16.4°N, 120.6°E) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	9.2						3.20
01	220	7.4						3.20
02	220	6.4					1.1	3.30
03	220	5.3						3.30
04	230	3.9					1.6	3.20
05	250	3.6					2.4	3.10
06	280	3.5					2.2	2.80
07	250	7.2			121	2.2		3.20
08	240	9.6	240	---	111	3.0		3.10
09	280	11.4	230	---	111	3.4	4.1	3.05
10	300	12.8	220	---	111	3.7	4.5	2.90
11	300	12.7	210	---	109	3.9	5.2	2.65
12	---	11.6	210	---	109	(3.9)	4.6	2.50
13	(320)	11.3	200	---	(110)	(3.8)	5.5	2.40
14	---	11.7	210	---	111	3.7	5.1	2.40
15	---	12.0	220	---	111	(3.4)	4.7	2.50
16	240	12.1	230	---	---	3.0	4.7	2.65
17	250	12.3			119	2.6	3.8	2.70
18	260	11.7					2.7	2.75
19	290	11.2					2.2	2.60
20	270	11.1					2.0	2.90
21	240	11.2					2.4	3.10
22	230	11.4					2.2	3.15
23	220	10.2					2.2	3.20

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

Watheroo, W. Australia (30.3°S, 115.9°E) February 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	280	5.7					3.6 2.9
01	270	5.8					3.4 2.9
02	250	5.2					3.4 3.0
03	250	4.5					2.8 3.0
04	270	4.3					2.6 2.9
05	270	4.3					2.2 2.8
06	270	4.6				1.7	1.9 3.1
07	250	6.4	250	3.8		2.5	2.7 3.1
08	290	7.1	230	4.5		3.1	3.7 3.1
09	315	7.5	230	4.8		3.5	3.9 2.9
10	350	8.0	220	5.3		3.6	4.3 2.9
11	345	8.5	210	5.4		3.7	4.4 2.8
12	350	8.8	210	5.4		3.8	4.3 2.8
13	350	9.4	230	5.5		3.8	4.2 2.8
14	350	9.2	240	5.4		3.7	4.3 2.85
15	340	9.1	240	5.0		3.6	4.2 2.9
16	310	8.5	240	5.0		3.5	3.9 2.9
17	300	8.5	250	4.5		3.2	3.9 3.0
18	260	7.9	240	3.7		2.5	3.6 3.15
19	250	7.0				1.6	3.1 3.1
20	250	6.8					3.2 3.1
21	250	6.6					3.2 2.9
22	270	6.0					3.0 2.9
23	290	6.0					2.8 2.8

Time: 120.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 21

San Francisco, California (37.4°N, 122.2°W) January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	(275)	(3.2)					2.9 (2.90)
01	(260)	(3.3)					2.9 (3.00)
02	(255)	(3.1)					2.6 (3.10)
03	(250)	3.1					2.4 3.00
04	(240)	(3.0)					2.6 (3.00)
05	(265)	(2.9)					3.0 (2.80)
06	(260)	(3.0)					2.6 (2.95)
07	250	(3.8)					2.4 (3.10)
08	225	6.5	---	---	---	1.9	3.45
09	230	7.6	225	---	(118)	(2.6)	3.40
10	245	(8.4)	220	(4.5)	<115	(2.9)	(3.25)
11	255	10.0	225	(4.5)	(115)	(3.1)	3.3 3.15
12	250	(10.0)	220	(4.5)	(115)	(3.2)	(3.25)
13	245	(9.8)	215	(4.4)	(115)	(3.2)	3.4 (3.15)
14	250	9.3	220	(4.2)	(115)	(3.1)	3.1 3.10
15	240	9.4	225	(3.7)	(115)	(2.9)	3.0 3.20
16	225	8.7	240	---	(119)	(2.4)	2.4 3.30
17	215	7.1	---	---			2.0 3.30
18	220	(5.8)					2.8 (3.25)
19	225	(4.4)					2.8 (3.30)
20	(230)	3.0					2.7 3.25
21	(250)	(2.6)					3.0 3.00
22	275	(2.8)					2.8 2.95
23	(265)	(3.0)					2.9 (2.90)

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

Watheroo, W. Australia (30.3°S, 115.9°E) January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	280	6.1					3.6 2.7
01	280	6.0					3.8 2.7
02	270	5.2					3.6 2.8
03	270	5.0					3.6 2.8
04	290	4.4					3.2 2.7
05	280	4.2					2.0 2.7
06	270	4.7	270	3.6		1.0	2.1 2.1
07	340	5.8	240	4.0		2.1	2.1 2.95
08	350	6.1	230	4.6		3.2	4.3 2.9
09	390	6.3	220	4.9		3.5	4.2 2.7
10	380	7.2	220	5.2		3.7	4.3 2.7
11	370	7.6	220	5.2		3.8	4.6 2.7
12	380	7.8	220	5.1		3.9	4.5 2.7
13	390	7.8	220	5.2		3.8	4.4 2.7
14	370	8.0	230	5.1		3.8	4.4 2.7
15	360	8.0	220	5.0		3.7	4.2 2.8
16	340	7.6	230	4.8		3.5	3.9 2.8
17	320	7.2	240	4.5		3.1	3.9 2.8
18	290	7.1	250	3.8		2.6	3.8 2.9
19	270	7.0	---	---		1.9	2.1 2.9
20	260	7.0					2.8 2.8
21	280	6.8					1.8 2.7
22	290	6.6					2.0 2.6
23	300	6.2					3.5 2.7

Time: 120.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 20

Lulea, Sweden (65.6°N, 22.1°E) January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	315	---					2.7
01	310	---					2.5
02	300	---					2.6
03	300	(2.0)					2.5
04	290	---					2.4
05	280	(2.2)					
06	300	(2.4)					2.0
07	290	---					---
08	260	3.0					1.7
09	230	4.8			---	1.5	3.25
10	225	6.0			---	1.7	2.3 3.4
11	230	6.6			---	1.8	1.9 3.4
12	215	6.8			---	2.0	2.0 (3.4)
13	210	7.0			---	1.8	2.2 (3.3)
14	220	6.2			---	1.6	1.7 (3.5)
15	210	5.5			---	---	(3.5)
16	230	4.8					(3.2)
17	235	(4.0)					1.8
18	250	3.3					2.0
19	280	---					---
20	(295)	---					2.3
21	(300)	---					2.5
22	(315)	---					2.5
23	(310)	---					3.2

Time: 15.0°E.

Sweep: 1.5 Mc to 10.0 Mc in 6 minutes, automatic operation.

Table 22

Baguio, P. I. (16.4°N, 120.6°E) January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	230	6.7					3.10
01	240	6.0					1.7 3.20
02	230	5.6					1.6 3.20
03	230	4.4					1.3 3.15
04	250	3.4					3.10
05	270	3.1					1.8 3.00
06	270	3.2					1.7 2.85
07	250	6.8					2.5 3.15
08	250	9.7	235	---	125	2.0	3.7 3.15
09	280	11.6	230	---	111	2.8	5.0 3.20
10	280	12.1	210	---	109	(3.2)	6.0 2.95
11	290	11.6	210	---	109	(3.4)	6.0 2.65
12	340	11.9	200	---	109	(3.6)	7.0 2.50
13	(300)	11.2	200	---	(115)	(3.5)	6.1 2.50
14	(310)	11.2	210	---	111	3.4	5.0 2.60
15	(300)	11.0	220	---	111	3.3	4.8 2.65
16	240	11.7	230	---	115	2.9	4.0 2.75
17	250	11.7			116	2.2	3.3 2.90
18	250	11.5					2.4 3.00
19	240	11.0					2.4 2.95
20	240	10.6					2.4 3.00
21	230	10.3					3.1 3.20
22	210	9.2					2.7 3.30
23	220	7.6					1.9 3.20

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24

Buenos Aires, Argentina (34.5°S, 58.5°W) January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	9.2					4.8 2.7
01	280	8.6					3.8 2.8
02	260	8.4					3.6 2.8
03	270	7.4					3.1 2.8
04	280	7.2					2.9 2.7
05	270	6.8					1.6 2.7
06	240	7.7	---	---	100	2.4	3.8 2.8
07	270	8.2	220	---	100	3.0	4.0 2.9
08	300	8.6	210	---	---	---	5.4 2.8
09	320	9.2	200	---	---	---	5.0 2.6
10	370	10.1	200	---	---	---	4.3 2.5
11	370	11.2	200	---	---	---	4.3 2.6
12	360	11.6	200	---	---	---	4.8 2.8
13	360	11.5	200	5.2	---	---	4.6 2.8
14	320	11.7	200	5.2	---	---	4.0 2.9
15	320	11.6	210	---	---	---	3.8 3.0
16	310	11.3	200	---	---	---	3.8 3.0
17	300	11.0	220	---	---	---	3.7 2.9
18	280	10.8	230	---	---	---	3.8 3.0
19	270	10.7					3.0 3.0
20	280	9.4					3.8 (2.9)
21	320	9.3					3.2 2.7
22	320	9.0					5.1 2.7
23	310	9.2					3.6 2.7

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 25

Christchurch, New Zealand (43.6°S, 172.8°E)

January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.5					3.0	2.7
01	280	5.7					3.7	2.7
02	(290)	5.4					3.6	2.7
03	280	4.9					3.8	2.7
04	(280)	4.8					3.4	2.7
05	(280)	4.8				1.4		2.9
06	300	5.3	260	3.8		2.3		3.0
07	310	6.0	260	4.3		2.8		3.0
08	330	6.7	240	4.7		3.2	6.4	2.9
09	350	7.2	---	4.9		3.3	5.5	2.9
10	340	7.2	---	5.0		3.5	5.6	2.9
11	340	7.4	220	5.1		3.6	5.0	2.9
12	340	7.1	220	5.2		3.7		2.8
13	370	6.8	220	5.2		3.7		2.8
14	360	7.2	220	5.1		3.6		2.8
15	360	7.1	240	5.0		3.5		2.8
16	360	7.0	240	4.8		3.3		2.8
17	320	7.5	250	4.4		3.0	5.0	2.8
18	300	7.7	250	3.8		2.5	5.0	2.9
19	270	7.6	270	2.8		1.8		2.9
20	270	7.4				---	4.1	2.7
21	280	7.4					3.2	2.7
22	280	7.2					3.4	2.6
23	(300)	6.7					3.5	2.6

Time: 172.5°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 27

Christchurch, New Zealand (43.6°S, 172.8°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	7.4					2.8	2.7
01	290	7.0					2.4	2.7
02	280	6.2					2.7	2.7
03	270	5.7					2.4	2.8
04	280	5.3				---		2.8
05	280	5.7	270	3.3		1.9		2.9
06	300	6.4	250	4.1		2.5		3.0
07	300	6.8	240	4.4		2.9	4.7	3.05
08	310	7.0	230	4.7		3.2	5.4	3.0
09	320	7.8	---	4.9		3.4	5.5	2.9
10	350	7.6	210	5.2		3.5	5.9	2.9
11	340	8.0	220	5.2		3.5	5.5	2.9
12	360	8.0	220	5.2		3.5	5.0	2.8
13	360	7.8	220	5.2		3.5	4.5	2.8
14	350	7.7	220	5.2		3.5	4.4	2.8
15	350	7.8	240	5.2		3.5	4.2	2.8
16	340	7.9	240	4.8		3.3		2.8
17	330	8.2	260	4.6		3.0	4.6	2.8
18	310	8.5	250	4.0		2.5	5.0	2.8
19	270	8.6	---	---		1.7	4.3	2.8
20	270	8.5					4.2	2.8
21	280	8.1					4.3	2.7
22	280	8.2					3.6	2.7
23	290	7.9					2.9	2.6

Time: 172.5°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 29*

Slough, England (51.5°N, 0.6°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	3.1					2.4	2.65
01	295	3.2					2.6	2.65
02	285	3.1					2.6	2.65
03	285	2.8					2.6	2.65
04	285	2.5					2.6	2.75
05	270	2.5					2.8	2.85
06	270	2.4					2.6	2.9
07	245	3.8			(150)	(1.5)	2.7	3.0
08	230	6.2			135	1.9	3.2	3.35
09	230	7.6	220	(3.5)	125	2.3	3.9	3.35
10	235	8.2	220	3.6	120	2.6	4.0	3.3
11	235	8.9	220	3.8	125	2.8	3.8	3.25
12	235	8.9	220	3.7	125	2.8	4.1	3.25
13	235	8.6	225	3.6	125	2.7	3.9	3.2
14	235	8.7			125	2.5	3.6	3.25
15	230	8.5			130	2.1	3.6	3.3
16	220	7.4			145	1.7	3.2	3.25
17	225	6.1					3.0	3.15
18	235	5.3					2.9	3.1
19	240	4.0					2.4	3.0
20	265	3.4					2.2	2.9
21	295	3.0					2.3	2.75
22	315	3.0					2.2	2.7
23	305	3.0						2.65

Time: 0.0°.

Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 26

Nairobi, Kenya (1.3°S, 36.8°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	>8.9						2.8
01	250	>8.4						2.9
02	270	>7.8						2.9
03	250	7.6						3.1
04	230	6.2						<3.2
05	230	5.0						3.2
06	240	4.0						3.0
07	250	6.3	250	---	130	2.1	2.7	3.1
08	270	7.7	230	4.5	110	2.9		3.0
09	300	9.0	220	5.0	110	3.3		2.8
10	320	9.4	210	5.0	110	3.6		2.55
11	350	10.0	200	5.2	110	3.8		2.5
12	400	10.6	200	5.5	100	3.9		2.4
13	410	>11.0	---	(5.2)	110	---		2.4
14	360	(11.7)	---	5.2	110	---		(2.5)
15	340	11.8	200	5.1	110	3.7		2.55
16	320	11.4	210	4.9	110	3.4		2.5
17	(310)	>11.4	230	4.6	110	2.9		2.5
18	(300)	11.4	250	---	120	2.3		2.6
19	300	11.0						2.6
20	350	10.4						2.5
21	340	>10.3						2.6
22	280	11.0						2.8
23	230	9.8						3.2

Time: 45.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 28*

Inverness, Scotland (57.4°N, 4.2°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	325	(2.0)						---
01	325	(1.8)						---
02	330	1.8						---
03	325	1.9						(2.6)
04	315	1.9						(2.7)
05	300	2.0						2.8
06	295	2.0						2.9
07	280	(2.4)						---
08	240	4.6			(140)	1.7		3.2
09	225	6.2			120	1.9	2.5	3.4
10	225	7.5			115	2.2	2.6	3.4
11	235	7.7	220	(3.4)	115	2.3		3.3
12	235	8.4	225	(3.6)	115	2.4		3.3
13	235	8.2	225		115	2.4		3.3
14	230	8.2			130	2.2		3.3
15	230	7.4			130	2.0		3.3
16	225	6.8			(140)	1.7		(3.4)
17	240	6.1						3.1
18	240	5.2						3.0
19	240	4.0						3.1
20	260	3.0						(3.0)
21	295	(2.5)						---
22	310	(2.2)						(2.6)
23	340	(2.0)						---

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 30*

Singapore, British Malaya (1.3°N, 103.8°E)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	235	7.9						2.8
01	250	7.3						2.8
02	255	7.0						2.9
03	250	6.5						3.0
04	250	5.1						3.1
05	245	4.1						3.1
06	270	5.5			140	1.7		3.0
07	245	7.7			125	2.6		2.9
08		8.9	235		115	3.1		2.7
09		9.4	225		110	3.4		2.3
10		10.2	215		110	3.6	4.5	2.2
11		10.9	205		110	3.8	4.6	2.2
12		10.9	205		110	3.8	4.4	2.2
13		11.0	200		110	3.7	4.0	2.2
14		11.2	200		110	3.6	4.4	2.2
15		11.4	215		110	3.3	3.8	2.3
16		11.4	230		115	2.8	3.8	2.3
17	245	11.2			135	2.3	3.7	2.3
18	295	11.0					3.2	2.2
19	345	10.7					3.0	2.3
20	340	10.6					2.8	2.4
21	290	11.3					2.9	2.6
22	240	11.6						3.1
23	220	8.9						2.9

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 31

Townsville, Australia (19.3°S, 146.7°E)								November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	260	(9.6)					3.7	(3.1)	
01	250	>8.4					3.6	(2.9)	
02	260	>6.8					3.1	(2.9)	
03	255	7.7					3.1	(3.0)	
04	250	6.7					2.8	3.0	
05	250	>6.0					2.8	3.0	
06	240	6.2			130	2.1	3.1	3.25	
07	260	7.0	230	(4.2)	110	2.7	4.0	3.2	
08	300	7.4	220	4.8	110	3.2	4.9	3.1	
09	310	8.1	220	5.0	100	3.4	5.6	2.85	
10	330	9.5	210	5.1	110	3.5	5.0	2.8	
11	340	10.6	200	5.2	(110)	3.7	5.7	2.8	
12	325	11.6	200	5.1	110	3.7	4.0	2.8	
13	315	11.7	200	5.1	110	3.7	2.9	2.9	
14	310	11.6	210	5.0	110	3.6	5.2	2.9	
15	300	11.5	225	4.9	110	3.5	5.7	3.0	
16	300	11.0	250	4.7	110	3.2	5.4	3.0	
17	280	>10.0	---	4.3	110	2.7	5.0	3.0	
18	260	>9.4			---	---	4.0	(3.0)	
19	250	(9.2)					3.7	(3.0)	
20	285	>9.0					3.6	---	
21	300	(8.8)					3.0	(2.8)	
22	295	>9.2					3.2	---	
23	280	>9.4					3.0		

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 33

Brisbane, Australia (27.8°S, 153.0°E)								November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	260	7.9					4.1	2.8	
01	250	7.0					4.0	2.9	
02	260	5.8					2.9	2.8	
03	270	5.6						2.8	
04	270	5.5						2.8	
05	250	5.9						3.0	
06	240	6.5	---	3.9	120	2.4	3.6	3.15	
07	265	6.8	230	4.4	110	2.9	4.9	3.0	
08	300	7.5	230	4.6	110	3.2	5.5	2.9	
09	320	8.0	---	5.0	110	3.5	6.0	2.8	
10	320	8.5	210	5.1	110	3.6	6.0	2.7	
11	330	9.0	200	5.1	110	3.7	5.5	2.7	
12	310	9.8	---	5.0	110	3.6	5.8	2.8	
13	320	9.8	200	5.0	110	3.6	5.3	2.8	
14	310	10.0	225	5.0	120	3.5	4.6	2.8	
15	300	9.9	235	4.8	115	3.3		2.8	
16	300	9.7	245	4.5	120	3.0	4.4	2.8	
17	270	9.5	---	---	120	2.6	4.6	2.9	
18	250	8.6			---	E	4.1	2.9	
19	250	8.4					4.0	2.8	
20	270	8.0					3.1	2.7	
21	295	8.0					3.2	2.7	
22	295	8.0					3.3	2.7	
23	280	7.9					3.1	2.7	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 35

Hobart, Tasmania (42.9°S, 147.3°E)								November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	280	5.1						2.7	
01	270	4.6						2.7	
02	260	4.4						2.7	
03	250	3.6						2.7	
04	280	3.4						2.7	
05	250	4.0			120	1.6		2.95	
06	240	4.6	---	---	100	2.2		2.9	
07	230	5.4	230	4.0	100	2.7		2.9	
08	350	5.6	220	4.5	100	3.0		2.95	
09	380	6.0	200	4.6	100	3.3		2.8	
10	360	6.4	200	4.7	100	3.4		2.8	
11	370	6.7	200	4.8	100	3.5		2.8	
12	370	7.0	200	4.9	100	3.5		2.8	
13	380	7.0	200	4.9	100	3.5		2.8	
14	350	7.0	200	4.8	100	3.4		2.85	
15	350	7.1	210	4.6	100	3.3		2.9	
16	300	7.0	220	4.5	100	3.0		2.9	
17	230	7.0	---	---	100	2.7		2.9	
18	250	7.3			100	2.1		2.9	
19	250	7.5			120	1.6		3.0	
20	250	7.0						2.8	
21	260	6.2						2.75	
22	280	6.0						2.7	
23	300	5.5						2.6	

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 32

Rarotonga I. (21.3°S, 159.8°W)								November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	280	(9.0)						3.2	(3.1)
01	250	9.0						2.9	3.05
02	250	7.7						1.8	3.0
03	290	(7.1)						1.8	(2.9)
04	280	(7.0)						1.8	(2.95)
05	270	7.3						1.8	3.0
06	260	8.3			130	1.9	3.0	3.2	
07	250	8.5	250	4.2	120	2.8		3.3	
08	280	8.7	240	5.0	115	3.2	3.2	3.1	
09	300	9.5	230	5.2	115	3.5	4.6	2.9	
10	320	11.1	220	5.5	115	3.6	4.7	2.8	
11	330	12.4	230	5.5	115	3.8		2.8	
12	330	13.4	220	5.5	115	3.8		2.9	
13	320	14.0	240	5.5	115	3.8		3.0	
14	320	13.7	230	5.5	115	3.7		3.0	
15	310	13.3	240	5.2	115	3.5		2.9	
16	310	12.6	250	5.3	115	3.2		2.9	
17	300	(11.9)	(250)	4.5	115	2.7	4.0	(2.9)	
18	280	(11.0)	---	---	---	1.7	4.4	(2.9)	
19	280	(9.3)					3.8	(2.95)	
20	300	(9.4)					4.1	(2.9)	
21	300	(9.2)					3.8	2.9	
22	310	(9.2)					3.5	(2.9)	
23	300	(9.5)					3.8	(2.95)	

Time: 157.5°W.

Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 34

Canberra, Australia (35.3°S, 149.0°E)								November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	---	(6.7)					3.1	(2.9)	
01	---	(6.0)					3.0	(2.95)	
02	---	(5.8)					3.0	(3.1)	
03	---	4.4					2.8	2.9	
04	---	4.3						2.9	
05	260	4.5			(110)	(1.5)		3.1	
06	240	5.5	240	---	110	2.4		3.15	
07	305	6.0	230	4.3	100	2.9	3.6	3.1	
08	325	6.5	220	4.6	100	3.1	4.0	3.1	
09	310	7.0	210	4.7	100	3.5	4.2	3.1	
10	350	7.4	200	4.8	100	3.5	4.2	2.9	
11	320	7.6	200	4.9	100	3.5	4.2	3.0	
12	320	7.8	200	5.0	100	3.5	4.2	3.0	
13	325	8.0	210	4.8	100	3.5	4.1	3.0	
14	320	8.2	200	4.8	100	3.5	4.0	3.0	
15	300	8.1	210	4.7	100	3.4	3.7	3.0	
16	290	8.0	220	4.4	100	3.1		3.1	
17	270	8.0	230	(4.1)	110	2.8	3.3	3.1	
18	240	7.7	---	---	110	2.2	4.0	(3.0)	
19	(240)	(7.1)					3.8	(3.0)	
20	---	(7.0)					4.0	(3.0)	
21	---	(7.0)					3.4	(2.8)	
22	---	(6.8)					3.6	(2.8)	
23	---	(6.7)					3.6	(2.8)	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 36

Christchurch, New Zealand (43.6°S, 172.8°E)								November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	290	6.0						2.7	
01	280	5.7					1.7	2.8	
02	280	5.3						2.8	
03	270	4.5						2.8	
04	280	4.4						2.8	
05	270	4.4	260	---		1.5		3.0	
06	290	5.5	260	3.7		2.3		3.0	
07	310	5.7	250	4.3		2.8		3.0	
08	310	6.5	240	4.6		3.1		3.0	
09	320	7.2	220	4.8		3.3		3.0	
10	340	7.4	220	4.9		3.4		2.95	
11	330	7.6	220	5.0		3.5		2.9	
12	320	7.7	230	5.0		3.5		2.9	
13	320	7.7	220	5.0		3.4		2.9	
14	330	7.7	220	4.8		3.3		2.9	
15	320	7.7	230	4.7		3.1		2.9	
16	320	7.6	240	4.4		2.9		2.9	
17	300	7.8	260	4.2		2.6		2.9	
18	280	8.0	270	3.6		2.1		2.9	
19	270	8.2				---	2.9	2.9	
20	270	7.8					3.2	2.8	
21	270	7.4					2.9	2.8	
22	280	7.0					2.8	2.7	
23	280	6.5					2.4	2.7	

Time: 172.5°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute

Table 37^a

Inverness, Scotland (57.4°N, 4.2°W)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	(3.0)						(2.7)
01	300	(2.8)						(2.8)
02	310	(2.7)						(2.7)
03	310	(2.4)						---
04	300	(2.2)						---
05	265	(2.2)						---
06	275	(2.3)						(3.0)
07	245	3.9			(140)	(1.8)		3.2
08	235	5.4			120	2.0	2.5	3.2
09	250	6.2	(220)	(3.7)	115	2.4		(3.2)
10	260	6.9	215	(3.8)	110	2.6		3.2
11	265	7.2	220	(4.0)	110	2.7		(3.2)
12	260	7.9	215	(4.0)	110	2.8		(3.2)
13	265	7.9	215	(4.0)	110	2.7		(3.1)
14	250	7.7	220	(3.7)	110	2.6		(3.2)
15	240	7.5	(225)		115	2.4		(3.1)
16	240	7.0	(235)		125	2.0		(3.2)
17	230	6.9			(135)	(1.9)		(3.1)
18	235	6.5						(3.1)
19	235	6.0						(3.1)
20	240	(4.9)						(3.1)
21	255	4.1						(3.1)
22	280	3.5						(2.8)
23	295	(3.2)						(2.6)

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 39^a

Singapore, British Malaya (1.3°N, 103.8°E)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	7.5						2.9
01	240	6.6						2.9
02	245	6.0						3.0
03	240	4.9						3.1
04	245	4.1						3.3
05	245	3.3						3.2
06	255	5.1						3.1
07	(255)	8.0	245		125	2.5	3.3	2.8
08		9.2	230		120	3.0	3.9	2.5
09		9.8	210		115	3.3	3.6	2.2
10	(370)	10.4	205		110	3.6	4.5	(2.1)
11	(365)	(10.7)	205		110	3.7	3.9	(2.2)
12	(360)	(10.3)	200		110	3.7	4.0	2.2
13		10.2	200		110	3.7	4.0	2.3
14	(335)	10.9	200		110	3.5	4.4	2.4
15	(310)	11.4	210		110	3.2	3.0	2.5
16		11.4	235		115	2.9	3.7	2.4
17	250	11.4	245		130	2.3	3.5	2.4
18	285	11.2						2.4
19	370	11.0						2.4
20	310	11.1					3.0	2.5
21	265	11.5					3.3	2.8
22	235	11.8					2.3	3.1
23	210	9.7						3.2

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 41

Brisbane, Australia (27.5°S, 153.0°E)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.9						2.9
01	250	5.5						2.9
02	250	4.7						2.9
03	275	4.2						2.8
04	280	4.4						2.8
05	260	4.6						2.9
06	250	6.0			125	1.9		3.2
07	250	7.0	240	4.0	110	2.6	3.6	3.2
08	290	7.4	230	4.5	110	3.0	3.6	3.0
09	290	8.2	220	4.6	120	3.2	3.8	3.0
10	290	8.5	210	4.8	120	3.3	4.5	3.0
11	300	8.4	200	4.8	120	3.4	3.8	2.95
12	300	8.5	200	4.8	120	3.5	3.8	2.9
13	300	8.5	200	4.6	120	3.4	3.7	2.9
14	300	8.2	210	4.6	120	3.3	4.0	2.9
15	295	8.4	220	4.5	120	3.0	3.8	2.9
16	280	8.5	240	4.1	120	2.8	3.0	3.0
17	250	8.4	---	---	120	2.2	3.6	3.0
18	250	8.1					2.2	2.9
19	260	7.3						2.9
20	275	6.8						2.8
21	290	6.5						2.8
22	280	6.4						2.8
23	270	6.0						2.9

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 39^a

Slough, England (51.5°N, 0.6°W)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	3.0					2.5	2.7
01	295	3.7					2.6	2.7
02	290	3.7					2.6	2.7
03	285	3.5					2.6	2.75
04	280	3.2					2.6	2.0
05	265	2.8					2.6	2.9
06	255	3.2					2.6	2.95
07	250	5.2	235	3.3	135	1.8	2.0	3.3
08	250	6.3	235	3.6	120	2.3	3.2	3.3
09	255	7.2	230	3.9	115	2.5	3.5	3.2
10	260	7.9	220	4.0	115	2.7	4.2	3.2
11	265	8.1	215	4.2	115	2.9	3.8	3.15
12	265	8.4	220	4.2	115	3.0	3.9	3.1
13	260	8.4	225	4.2	120	3.0	3.8	3.15
14	255	8.5	230	4.0	120	2.8		3.2
15	250	8.0	235	3.9	120	2.6	3.2	3.15
16	240	7.8	(250)	(3.6)	120	2.1	3.2	3.2
17	235	7.2			(140)	(1.9)	2.8	3.2
18	235	6.7					2.6	3.1
19	235	6.0					2.5	3.1
20	245	4.9					2.3	3.0
21	260	4.1					1.4	2.85
22	285	3.9					2.5	2.7
23	290	3.7					2.2	2.7

Time: 0.0°.

Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 40

Townsville, Australia (19.3°S, 146.7°E)

October 1955 *

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	>7.4					2.1	---
01	250	>6.4					2.0	(3.25)
02	240	>5.8					1.5	(3.0)
03	265	>5.0						2.0
04	270	4.8						2.85
05	285	4.8					2.0	2.0
06	260	>5.7			135	1.8		3.2
07	250	>8.0	240	4.0	110	2.5		(3.3)
08	275	8.5	220	4.6	105	3.0	4.2	3.3
09	275	9.2	210	4.8	100	3.2	4.0	3.25
10	280	9.0	210	4.8	100	3.4	4.1	3.1
11	290	(9.8)	200	4.8	---	3.5	4.7	3.0
12	300	>10.0	200	5.0	---	3.6	4.0	3.0
13	295	9.8	200	5.0	---	(3.6)	4.0	3.0
14	310	9.4	210	4.9	---	3.5	4.0	2.9
15	310	9.4	205	4.9	100	3.3	4.0	3.0
16	290	9.6	225	4.6	110	3.0	4.2	3.0
17	270	>9.4	240	4.0	110	2.5	4.0	(3.1)
18	250	>9.4			---	---	3.2	(3.15)
19	250	>7.9					2.1	---
20	275	>7.8					2.5	---
21	290	---					2.5	---
22	290	>8.5					3.0	---
23	270	---					2.9	---

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

*No observations taken from 18th to 26th, inclusive.

Table 42

Canberra, Australia (35.3°S, 149.0°E)

October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(4.9)						(2.9)
01	---	4.8						3.0
02	---	(4.4)						3.1
03	---	4.0						3.0
04	---	4.1						3.0
05	<250	4.0						3.1
06	240	4.9	---	---	---	(2.1)		3.3
07	250	5.5	230	4.0	110	2.5		3.35
08	290	6.3	220	4.3	100	2.9		3.2
09	300	6.7	210	4.6	100	3.2		3.2
10	300	7.0	200	4.6	100	3.4		3.2
11	290	7.5	190	4.7	100	3.5		3.2
12	300	8.0	190	4.8	100	3.5		3.1
13	290	7.8	190	4.6	100	3.5		3.15
14	290	7.9	200	4.6	100	3.4		3.15
15	275	7.5	210	4.4	100	3.2		3.2
16	270	7.2	210	(4.2)	105	3.0		3.2
17	250	7.2	230	---	110	2.4		3.2
18	240	7.4	---	---	---	---		3.15
19	(230)	7.0						(3.1)
20	---	(6.7)						(3.0)
21	---	(6.2)						(2.9)
22	---	(5.8)						(2.9)
23	---	(5.1)						(2.9)

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 43

Hobart, Tasmania (42.9°S, 147.3°E) October 1955								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.5						2.7
01	270	4.0						2.7
02	270	3.6						2.8
03	250	3.2						2.8
04	270	2.8						2.8
05	270	3.1						2.8
06	250	4.2			120	1.8		3.0
07	230	5.0			100	2.4		3.1
08	230	5.6	220	4.1	100	2.0		3.0
09	350	5.9	200	4.5	100	3.1		2.9
10	330	6.3	200	4.5	100	3.2		3.0
11	340	6.6	200	4.6	100	3.3		2.9
12	330	7.0	200	4.6	100	3.4		2.9
13	330	7.0	200	4.6	100	3.4		2.95
14	320	7.0	200	4.5	100	3.2		2.95
15	300	7.0	220	4.5	100	3.1		3.0
16	220	6.8	---	---	100	2.0		3.0
17	240	6.6			100	2.4		3.0
18	250	7.0			110	1.7		3.0
19	250	7.0			---	---		2.9
20	250	6.4						2.8
21	250	5.7						2.7
22	270	5.0						2.8
23	280	4.6						2.8

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 45

Delhi, India (20.6°N, 77.1°E) September 1955								
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	200	4.0						3.25
01	280	3.9						3.25
02	(260)	4.0						(3.40)
03								
04	280	3.6						3.25
05	290	3.8						3.25
06	240	5.4						3.60
07	240	7.1						3.60
08	240	>7.9						3.60
09	260	8.5						3.40
10	200	9.4						3.25
11	280	9.7						3.25
12	290	>10.6						3.25
13	300	11.1						3.10
14	200	11.8						3.25
15	290	12.0						3.25
16	200	11.6						3.25
17	260	10.0						3.40
18	240	9.5						3.60
19	240	8.4						3.60
20	260	6.0						3.40
21	280	4.5						3.25
22	300	4.0						3.10
23	280	3.9						3.25

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 47

Calcutta, India (22.9°N, 88.5°E) September 1955								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	6.0					2.4	3.00
01	240	5.8					2.1	3.05
02	230	5.4					1.9	3.25
03	210	3.5						3.40
04	250	2.8					1.7	3.00
05	270	2.3					2.0	2.95
06	240	4.8			120	1.8	2.1	3.20
07	250	7.0	230	4.0	105	2.6	3.2	3.25
08	270	9.0	220	4.5	100	2.9	4.0	3.15
09	295	10.0	200	4.6	100	3.1	3.6	3.00
10	320	11.3	200	4.7	100	3.3	4.0	2.75
11	340	12.0	200	5.0	100	3.4	4.0	2.70
12	340	12.0	195	4.9	100	3.5	3.8	2.75
13	310	12.4	190	4.7	100	3.4	3.5	2.80
14	300	12.2	200	4.7	100	3.3	3.5	2.90
15	290	12.1	210	4.5	100	3.1		3.05
16	260	12.0	220	4.3	100	2.9		3.15
17	250	12.0	235	3.6	105	2.3	4.0	3.30
18	230	11.7			115	1.8	3.4	3.30
19	220	11.1					3.1	3.30
20	215	10.0					2.1	3.25
21	245	8.5					1.9	3.10
22	255	7.0					2.1	3.00
23	260	6.5					2.0	2.95

Time: 90.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 44*

Falkland Is. (51.7°S, 57.8°W) October 1955								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.1						2.6
01	305	6.2						2.6
02	295	6.1						2.7
03	275	6.1						2.7
04	260	5.8						2.8
05	250	6.2			165	1.5		3.0
06	230	6.9			125	1.9	2.8	3.4
07	230	7.0	230	3.4	110	2.5	3.3	3.3
08	275	7.7	220	(4.2)	110	2.8	4.0	3.1
09	275	8.0	220	(4.6)	110	3.1	4.0	3.1
10	205	8.7	220	4.8	105	3.2	4.2	3.0
11	280	9.8	(215)	4.9	105	3.3	4.2	3.1
12	270	9.6	225	5.0	105	3.3	3.9	3.1
13	270	9.5	220	4.8	105	3.3	4.2	3.1
14	265	9.0	215	4.7	105	3.2	3.8	3.1
15	260	8.4	225	4.4	110	3.0	3.4	3.2
16	250	7.6	230	3.9	110	2.7	>3.1	3.3
17	250	7.5	(235)	(2.9)	120	2.3	>3.1	3.3
18	245	7.4			135	2.0	2.9	3.2
19	245	7.0			(130)	(1.9)	2.3	3.0
20	255	6.7					2.2	2.9
21	270	6.4						2.8
22	275	6.1						2.7
23	295	6.3						2.6

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 46

Ahmedabad, India (23.0°N, 72.6°E) September 1955								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.8					3.5	2.90
01	270	4.6					3.1	3.10
02	250	4.5					2.5	3.30
03	230	3.8					2.4	3.45
04	260	2.8					>2.4	3.00
05	285	2.6					2.9	3.10
06	250	4.3					2.5	3.25
07	250	>7.0	230	3.8	110	2.2	3.6	3.50
08	260	8.0	215	4.2	107	2.7	4.2	3.30
09	275	8.7	210	4.5	105	3.1	4.6	3.20
10	305	10.0	205	4.7	105	3.3	4.5	2.90
11	335	12.3	200	4.8	105	3.4	5.0	2.85
12	335	13.1	205	4.8	105	3.6	4.3	2.90
13	335	13.6	220	4.8	105	3.5	4.4	2.90
14	315	13.6	220	4.8	105	3.4	4.6	3.00
15	300	>13.9	225	4.6	105	3.2	3.7	3.00
16	270	14.0	225	4.4	110	2.9	4.3	3.15
17	260	13.3	235	4.0	110	2.4	3.6	3.15
18	240	13.0			---	---	3.4	3.25
19	220	11.4					3.2	3.30
20	210	8.8					2.4	3.20
21	240	7.1					3.2	2.90
22	300	5.6					>3.0	2.80
23	300	4.6					3.3	2.80

Time: 75.0°E.

Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 48

Bombay, India (19.0°N, 73.0°E) September 1955								
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	270	4.5						3.35
07	285	5.2						3.20
08:30	300	6.4						3.10
09	360	7.1						2.80
10	360	7.9						2.80
11	390	9.0						2.65
12	420	9.8						2.55
13	420	10.4						2.55
14	420	10.5						2.55
15	420	10.4						2.55
16	390	10.1						2.65
17	390	10.0						2.65
18	390	9.4						2.65
19	360	8.4						2.80
20	330	7.2						2.95
21	300	5.8						3.10
22	270	4.3						3.35
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

TABLE 61
IONOSPHERIC DATA

foF2, O.1 Mc, May 1956

75°W Mean Time

Station Washington, D.C. Lat 38.7°N Long 77.1°W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	63	59	51	48	45	42	50	49	52	56	64	66	69	71	72	75	71	71	74	72	69	66	62	60
02	F	F	F	F	F	F	F	72	76	82	85	93	96	96	96	96	94	95	94	92	85	76	72	72
03	68	67	64	62	54	49	64	74	75	80	86	94	92	91	92	91	92	92	94	96	88	77	72	70
04	68	64	62	60	52	53	71	89	90	100	90	98	100	102	100	96	94	92	95	100	97	80	77	72
05	72	67	60	56	58	58	68	78	84	92	95	100	102	100	104	108	108	105	103	98	84	78	76	74
06	71	64	64	59	55	50	64	72	86	86	90	92	92	94	96	99	93	93	94	92	92	80	75	68
07	66	59	58	56	52	48	59	69	75	78	79	80	85	88	86	86	92	94	96	90	80	74	70	68
08	66	62	62	61	56	53	59	66	74	80	89	98	94	93	93	92	91	90	90	86	78	73	68	
09	67	67	63	62	57	60	80	94	94	101	107	109	111	108	105	106	102	100	102	96	91	85	79	77
10	74	70	67	62	57	59	70	82	87	93	94	98	102	104	103	100	99	98	96	94	90	85	75	72
11	72	71	70	68	63	62	74	86	97	98	98	100	100	100	100	98	98	96	96	96	90	86	84	80
12	72	72	70	70	59	56	53	63	58	62	62	58	63	60	62	63	63	64	64	66	73	71	59	49
13	43	42	43	36	29	35	43	70	72	70	76	80	82	80	78	78	78	79	76	74	77	78	74	70
14	66	58	56	51	43	45	52	56	59	60	59	66	64	70	70	70	73	74	74	73	71	64	67	69
15	66	63	54	36	29	26	46	49	49	51	53	55	55	58	58	62	63	65	63	64	64	66	59	64
16	45	30	26	30	28	38	36	38	41	44	45	48	46	48	48	47	43	50	50	38	25	26	29	26
17	22	23	25	24	29	31	37	39	44	44	46	47	48	48	48	49	50	52	53	53	52	54	49	45
18	42	42	39	25	24	29	44	52	41	58	63	C	C	69	71	72	70	72	77	74	77	74	70	64
19	64	60	58	57	53	55	65	73	97	92	98	98	94	90	92	90	90	90	97	90	84	83	79	69
20	66	55	63	55	49	47	54	47	52	63	69	75	64	66	66	70	70	82	92	84	78	69	64	65
21	56	C	C	C	32	40	50	53	52	52	57	55	59	62	65	67	69	71	72	72	71	70	66	64
22	65	59	48	50	44	48	56	66	64	64	74	73	72	74	78	76	76	70	74	78	72	64	62	
23	59	56	55	54	51	52	64	71	84	73	83	83	95	99	93	88	86	86	90	101	102	96	68	64
24	42	30	32	31	27	31	40	40	41	43	45	46	47	47	47	50	55	54	27	34	32	32	29	
25	27	22	26	20	20	25	28	33	42	44	45	48	50	51	54	58	56	60	64	64	72	70	64	59
26	58	52	45	42	46	35	50	59	64	68	70	71	72	72	70	78	86	84	98	90	92	72	68	60
27	54	48	45	38	34	40	50	58	57	55	61	66	70	73	72	76	78	77	84	75	64	64	58	
28	51	50	55	44	42	41	46	51	55	54	54	54	60	64	64	65	60	60	66	65	71	69	61	59
29	57	54	50	48	47	50	54	74	65	60	62	60	61	68	67	64	60	100	92	83	75	67	66	
30	58	61	52	53	54	48	50	53	49	51	48	54	56	54	59	63	C	C	62	64	65	67	63	62
31	53	56	49	46	47	44	57	64	64	70	73	73	70	73	73	73	73	76	74	86	80	76	76	
MED	63	59	54	50	45	47	56	64	64	65	73	72	72	72	78	78	72	81	77	84	78	74	68	65
NO	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 62
IONOSPHERIC DATA

foF2, 0.1Mc, May 1956

75°W Mean Time

Station Washington, D.C. Lat 38.7°N Long 77.1°W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2300
01	61	57	51	48	43	45	50	51	59	60	63	67	70	71	75	73	71	72	72	71	66	64	60	59
02	56	53	48	44	39	56	69	75	78	84	90	95	96	94	94	96	94	94	92	88	78	74	70	72
03	68	66	63	58	50	55	66	75	80	85	89	94	92	92	92	90	92	92	94	92	80	76	71	68
04	68	64	64	57	51	59	78	91	94	92	92	100	100	100	98	96	92	93	96	94	82	78	77	72
05	68	63	58	57	58	61	70	84	86	95	97	102	100	102	108	108	106	104	103	92	78	78	74	72
06	69	64	63	57	53	55	67	79	88	92	94	90	94	94	100	97	91	94	94	94	88	76	72	67
07	62	59	57	54	49	50	64	72	75	80	81	83	90	85	88	88	96	97	94	88	72	70	68	67
08	59	60	60	59	56	53	62	69	80	85	90	96	93	93	94	92	92	91	90	90	80	75	72	66
09	68	68	64	57	57	74	85	93	101	103	107	112	109	107	107	102	101	104	96	92	88	83	77	77
10	72	68	64	59	58	67	77	85	87	92	98	100	103	105	100	98	98	95	96	94	88	80	74	72
11	71	70	70	64	60	67	78	91	100	97	100	100	100	100	100	98	98	98	96	97	84	85	80	80
12	72	66	68	65	56	61	59	63	62	61	61	62	60	63	61	63	62	66	66	72	73	63	54	44
13	38	44	42	32	32	39	54	69	70	72	76	78	78	80	80	80	80	78	78	77	80	78	70	70
14	64	58	52	47	42	45	52	56	58	64	59	64	66	71	70	72	72	72	72	73	72	66	69	48
15	62	65	46	31	33	40	47	44	46	53	53	63	58	62	62	63	64	63	63	64	64	66	58	51
16	31	31	31	29	29	34	37	42	43	45	46	45	47	48	48	46	45	49	46	30	25	25	27	25
17	23	22	25	25	29	34	39	40	45	47	47	47	48	49	47	51	52	52	54	54	52	52	46	45
18	44	40	37	35	34	43	50	55	62	63	C	C	67	69	72	70	71	75	76	75	76	74	67	64
19	62	59	57	55	50	62	76	88	96	93	92	86	87	90	90	90	88	90	88	88	82	82	73	69
20	66	64	58	51	48	50	52	49	56	57	70	72	67	68	72	76	79	86	88	80	75	63	64	60
21	52	C	C	C	31	44	53	54	51	54	54	58	62	66	66	70	70	74	74	72	72	68	64	64
22	64	56	52	47	44	53	56	63	66	70	74	72	76	76	78	77	72	76	74	76	76	68	62	60
23	56	55	55	52	49	62	71	76	80	86	90	88	98	96	92	86	82	86	97	100	105	80	66	54
24	39	27	30	33	30	35	34	40	42	44	45	45	46	45	44	47	55	58	50	45	36	25	27	20
25	26	28	30	26	38	35	38	41	42	44	45	47	51	47	55	55	58	61	64	69	76	68	68	56
26	54	52	45	40	36	45	56	60	62	70	71	74	72	76	78	84	84	88	90	82	76	68	65	56
27	49	48	41	37	34	48	53	54	57	57	60	64	69	72	72	75	76	80	80	85	70	67	64	58
28	57	55	48	45	40	44	49	54	56	55	60	60	61	66	64	66	68	68	70	71	72	62	60	58
29	57	52	49	49	47	57	71	80	80	83	80	86	86	86	88	90	90	96	100	91	84	72	64	57
30	61	59	55	53	49	49	52	50	50	52	49	56	58	54	56	56	C	C	63	63	67	64	64	57
31	55	50	48	42	41	51	58	64	70	70	76	72	74	72	70	72	74	75	78	80	82	74	74	72
MED NO	61	58	52	48	44	50	56	63	66	70	75	73	74	76	78	77	80	83	80	80	76	70	67	60
	31	30	30	30	31	31	31	31	31	31	30	30	31	31	31	31	30	30	31	31	31	31	31	21

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 63
IONOSPHERIC DATA

foF1, O.1Mc, May 1956

75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							L	L	450	490	500	520	530	530	520	510	480	L	L					
02							Q	L	L	L	L	L	H	500	550	490	L	L	L					
03							L	L	L	L	500	560	500	500	500	490	L	L	L					
04							L	L	L	U L	H	H	H	H	H	H	L	L	L					
05							Q	L	L	L	L	570	540	L	540	L	L	L	L					
06							A	L	L	580	L	H	H	A	570	540	L	L	L					
07							L	L	L	L	L	540	550	500	540	530	A	L	A					
08							Q	A	A	550	570	570	540	550	580	560	U C	L	L					
09							L	L	L	L	U L	L	U L	H	U L	U H	L	L	L					
10							Q	L	A	L	L	L	560	600	540	L	L	L	L					
11							Q	L	L	U L	L	L	H	H	560	560	L	A	A					
12							L	U L	440	470	520	530	510	530	540	520	500	490	440	400				
13							390	L	U L	420	470	520	560	520	550	580	540	500	L	L				
14							L	L	U L	U F	U F	F	F	U H	U F	U F	H	U H	L					
15							H	F	430	440	470	490	500	500	490	490	460	450	370	Q				
16							270	380	410	440	450	450	460	480	480	470	430	400	370					
17							350	390	430	460	460	470	480	480	480	480	460	450	440					
18							440	440	480	500	530	C	C	H	530	520	520	520	460	L	Q			
19							L	L	480	500	L	520	530	580	560	520	540	L	L					
20							U L	F	F	460	500	500	550	580	540	540	520	520	480	L	Q			
21							380	440	460	480	480	500	520	530	520	520	500	470	L					
22							L	L	500	520	530	550	540	540	500	480	H	L	L					
23							L	L	L	U L	A	A	A	530	530	530	480	L	L					
24							270	350	400	410	430	440	450	460	450	440	420	420	340	Q				
25							340	380	400	440	450	460	470	480	470	470	450	430	L					
26							360	L	L	480	500	520	540	520	520	520	490	L	L					
27							Q	H	450	480	490	520	520	500	500	470	450	L	Q					
28							Q	370	430	450	470	480	500	500	500	470	470	440	L	Q				
29							Q	L	L	480	500	510	530	550	530	530	500	420	L					
30							L	400	430	440	470	480	480	500	500	490	480	C	C	380				
31							L	L	520	490	500	540	500	520	520	480	470	L	L					
MED							370	430	450	480	500	520	530	520	520	520	480	440	380					
NO							1	13	12	19	25	23	25	29	29	31	28	21	13	6				

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 64
IONOSPHERIC DATA

foE, O.1Mc, May 1956

75°W Mean Time

Station: Washington, D.C. Lat 38.7°N Lang. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							220	270	310	330	350	360	360	360	360	330	320	290	220					
02							H	A	A	A	A	A	A	A	A	A	A	A	A					
03							200	250	300	330		A	A	A	A	A	A	A	A					
04							A	A	A	A	A	A	A	A	A	A	A	A	A					
05							B	A																
06									330															
07							B																	
08								270	310	330														
09							H	A	A	A	A	A	A	A	A	A	A	A	A					
10							240	290	340	350	360	370	380	390	380	370	340	300	240					
11							H	A	A	A	A	A	A	A	A	A	A	A	A					
12							230	290	320	340														
13							220	280	310	320	340	360	380	390	380	360	330	300						
14							A	A	A	A	A	A	A	A	A	A	A	A	A					
15							240	290	330	340														
16							240	280	310	340	350	360	360	370	360	350	320	290	230					
17							230	270	310	330	380	370	370	360	360	340	320	300	250					
18							240	290	320	390	360													
19							H	A	A	A	A	A	A	A	A	A	A	A	A					
20							240	290																
21							210	290	330	360	380	380	390	350										
22							H	A	A	A	A	A	A	A	A	A	A	A	A					
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24							190	250	320	310	320	340	340	370	360	360	350	320	280	230	190			
25							250	270	300	340	340													
26							U P	U A	A	A	A	A	A	A	A	A	A	A	A					
27							B	240	280	320	320													
28							S	H	H	320	340	350	370	360										
29							160	250	290	330	340	360	380	390	380	350	330	290	260					
30							A	H	U A	320	340	370	360	350	360	350	340							
31							220	280	330	350														
MED							240	280	320	340	360	370	380	370	380	360	330	300	240					
NO						3	24	26	26	24	18	18	20	22	22	26	28	29	23	3				

TABLE 65
IONOSPHERIC DATA

fEs, O.1Mc, May 1956

75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01	S	E	E	E	S	16	G	G	G	G	37	40	40	40	38	36	35	31	G	17	S	37	40	36	
02	76	54	32	23	26	16	30	44	60	37	35	38	47	52	54	49	45	45	43	30	Y	S	11	S	
03	E	S	S	S	16	30	22	68	39	40	44	37	43	41	88	40	G	41	25	19	32	S	S	S	
04	40	39	32	19	14		24	43	37	46	45	48	38	35	G	48	64	32	48	19	S	E	E	S	
05	S	S	E	E	E	C	B		31	44	44	42	40	42	G	42	48	56	40	31	29	19	16	S	S
06	S	E	S		29	45	14	47	43	54	59	52	52	37	60	42	G	G	G	39	48	46	S	S	S
07	B	E	E	S	S	16	38	38	35	45	36	36	G	40	50	39	60	84	74	31	16	E	17	60	
08	35	52	68	43	64	36	45	72	104	47	49	33	G	52	42	49	43	G	25	17	E	S	S	24	
09	23	S	S	S	E	S		25	37	47	80	47	48	38	G	40	64	37	46	41	17	Y	33	S	S
10	36	S	S	S	S	S		35	46	52	48	46	45	52	45	39	88	29	24	26	17	S	E	S	S
11	S	S	E	Y	34	23	29	19	62	70	46	47	48	42	38	40	49	64	64	74	74	29	S	S	S
12	S	S	S	S	S	B		35	79	48	C	Y	45	53	37	46	52	39	37	G	26	22	S	S	S
13	S	H	S	S	S	C		24	80	70	71	44	44	40	G	G	G	G		36	42	19	47	32	37
14	Y	40	Y			S	Y	24	41	52	44	Y	Y	G	G	G	Y	44	G	G		S	S	S	S
15	90	33	37	80	40		Y	24	41	52	44	47		58	G	47	44		18			S	S	S	S
16	S	E		E	Y	G	H	Y	38	45	40		G	G	G	G		G	G	G	G	S	S	S	S
17	S	B	12		43	16		32	38								37					S	S	S	S
18	S	S	29	35	20	23		G	G		35	G	37		37	50	G	G				S	S	S	S
19	S	S	S	S	C	C		24		G			76	37	72	72	76	G				C	21	36	S
20	S	S	E	E	S	B	G	G		47	48	38	C	C	37	40	46	G	33	39	42	43	38	S	S
21	S	15	27	29	11		B	G		50	44	51	38	40	37	37	G	G	G			S	S	S	C
22	S	S	E	E	E			G	G		G						G	G		B	S	S	S	S	
23	S	C	C	C	S	C	S	G	G		90	76	40	40	153	54	47	G	G		30				
24	S									34	G	40	44	G	G	G	G			27	19	37	52	38	30
25	32	39	43	33	13	16	39	31	44	50	54	68	63	45	G	G		47	64	G	36	40	32	52	40
26	53	35	30	40	37	40	84	45	106	60	80	74	68	74	40	G	G	G	G	S	S	S	S	S	
27	S	S	S	B	S	G	G		G		G					G	G		G	G	S	S	B	B	
28	S	S					50		33		33	37	35	38	37		G	36	G	G	S	S	S	S	
29	S	S	58	47	31	20			32		36	41	54	60	52	49	G	G	G			S	S	S	
30	S	E	S	S	S	G			33	50	52	38	48	47	72	47	86	G	G		38	18	28	27	S
31	S	30	25	E	S		G		31	70	43	47	39	38	40	G		G	G			S	S	S	
32	S	S	S			14		31	Y		G					50		G		30	23	13	S	S	S
33	S	S	S	37	44	12	23	31	50	36	37		37	37	36	34	33		41	34	16		38	120	92
34	S	S	S	S	S	G		26	64	72	38	38	42	40	45	G		35	30	C	C		S	S	S
35	78	46	36		39	18	39	68	57	68	100	55	51	53	47	G	C	C	C		40	59	72	50	37
36	31	22	60	H	43	35		38	46	66	45	41	72	41	41	G		50	43	G	44	44	40	S	S
MED	36	30	29	29	26	16	24	43	47	45	44	40	40	41	40	39	34	30	27	19	29	32	37	U	38
NO	12	17	19	20	19	23	30	31	31	30	31	30	30	31	31	31	30	30	30	28	17	14	11	8	

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 66
IONOSPHERIC DATA

f min, 0.1 Mc, May 1956

75°W Meon Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	E S	E	E	E	E S	E S	E S	E S	E S	19	20	18	23	20	20	22	21	E S	E S	E S	E S	16	E S	E S
02	E	E S	E	E	E	13	16	16	16	16	21	16	19	16	16	21	16	E S	E S	E S	E S	E	E S	E S
03	E	E S	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	15	E S	E S
04	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	10	16	16
05	E S	E S	E	E	E	20	26	16	16	16	20	21	21	18	16	16	16	25	22	22	E S	12	E S	E S
06	E S	E	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
07	19	E	E	E S	E S	15	12	15	15	16	16	16	19	21	23	20	17	16	20	17	16	E	E S	E
08	E S	E S	E S	E S	E	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
09	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
10	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
11	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
12	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
13	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
14	E S	E S	E	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
15	E S	E	E	E	E S	E S	11	14	17	16	17	20	20	21	17	25	20	25	21	16	16	15	16	16
16	E S	15	24	E S	E S	E S	13	17	16	20	19	22	17	23	27	25	16	23	21	16	22	18	22	15
17	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
18	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
19	E S	E S	E	E	E	E	19	17	21	17	16	16	22	23	22	21	20	19	17	25	22	15	14	12
20	E S	E S	E	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
21	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
22	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
23	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
24	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
25	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
26	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
27	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
28	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
29	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
30	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
31	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
MED																								
NO																								

TABLE 67
IONOSPHERIC DATA

h'F2, Km, May 1956

75°W Mean Time

 Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	280	280	290	290	280	300	270	270	570	490	390	400	400	410	380	340	325	300	270	250	250	280	290	290
02	300	290	270	260	280	250	230	380	L	320	320	300	305	330	310	310	290	230	260	240	240	250	260	270
03	270	270	270	240	240	250	260	260	290	L	300	320	300	300	340	310	310	290	260	250	240	240	270	280
04	300	290	280	240	240	270	290	280	270	270	300	320	330	300	305	305	300	270	L	250	230	250	250	260
05	270	280	300	300	280	280	240	260	L	280	270	320	310	340	330	310	290	260	250	240	230	250	260	270
06	260	280	270	270	250	260	280	270	280	310	L	300	340	310	340	310	290	290	270	260	250	230	250	270
07	290	280	280	290	280	300	L	270	290	300	L	330	330	310	340	330	330	L	270	250	220	250	260	290
08	290	290	320	300	A	270	280	A	A	320	330	320	310	320	350	340	300	280	270	250	240	250	250	280
09	290	280	270	250	270	270	250	250	270	320	280	310	310	320	320	320	320	280	260	250	230	250	250	270
10	280	250	270	260	260	260	250	260	250	320	330	330	320	320	320	330	310	L	L	250	230	240	250	270
11	280	280	270	250	260	270	240	L	280	280	330	310	320	340	340	340	320	290	I A	270	260	240	270	280
12	290	300	290	280	280	310	L	320	470	490	540	640	490	570	490	470	440	430	370	320	280	270	270	290
13	U S	E A	U S	U S	U S	E C	U L	310	270	310	340	360	360	360	420	370	340	310	280	270	260	260	270	300
14	U A	270	U A	U A	U A	270	270	L	L	450	470	430	530	420	420	450	U S	410	340	300	270	250	260	310
15	300	280	290	300	340	310	390	490	550	700	660	620	650	570	570	500	450	430	360	290	260	260	300	280
16	340	510	450	430	470	330	310	G	G	G	G	G	G	G	G	G	G	580	500	310	400	390	400	360
17	470	420	S	390	400	340	700	G	890	G	G	G	G	G	G	830	620	440	L	290	270	290	280	290
18	310	300	330	330	320	290	L	410	360	L	450	C	C	440	410	370	410	360	300	270	260	290	250	260
19	260	280	280	270	270	260	L	270	290	280	L	300	320	360	360	330	330	300	270	250	240	260	250	280
20	290	290	250	270	270	300	L	G	620	420	500	370	420	430	500	400	380	380	280	290	250	250	270	300
21	290	C	C	C	320	300	350	420	480	610	480	570	550	550	440	460	390	360	L	270	250	290	290	310
22	280	280	300	300	310	260	260	300	370	380	370	L	400	410	400	370	350	340	290	280	260	250	270	270
23	270	300	270	300	300	250	240	290	290	330	330	U A	360	305	320	315	310	310	330	300	300	260	280	280
24	310	360	400	410	330	400	500	G	G	G	G	G	G	G	G	660	600	470	430	330	350	370	380	B
25	430	450	A	310	370	330	530	G	G	G	G	G	630	750	600	500	450	380	320	280	270	250	280	280
26	300	290	270	300	320	290	360	320	L	320	350	360	380	380	370	380	340	300	280	250	230	250	270	270
27	280	300	270	270	290	300	300	340	390	390	440	450	420	390	360	350	330	290	280	260	230	240	270	280
28	290	280	270	250	280	280	360	390	400	460	550	570	490	440	420	390	360	340	290	270	250	250	270	270
29	270	250	270	270	280	270	270	280	290	300	310	330	380	340	360	350	340	340	280	250	230	240	A	A
30	300	290	280	300	300	350	440	370	650	630	580	580	650	480	470	C	C	350	310	300	U A	320	320	280
31	260	270	I A	280	290	280	280	290	440	310	350	350	350	350	340	340	320	L	280	260	260	270	280	270
MED	290	280	280	290	280	280	280	320	380	330	380	360	380	380	370	350	335	310	280	260	250	250	270	280
NO	31	28	28	30	29	30	27	28	26	29	28	29	30	31	31	31	30	27	27	31	31	31	30	29

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 68
IONOSPHERIC DATA

h'F1, Km, May 1956

75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							240	220	210	220	205	200	210	210	230	210	220	225	240					
02							240	240	210	200	290	210	220	205	215	230	240	250						
03							240	250	215	220	230	200	200	200	210	230	230	250	250					
04							250	235	215	215	205	195	220	220	225	225	210	230	250					
05							230	220	205	205	205	210	210	230	230	250	250	250						
06							240	240	250	215	210	190	210	230	220	225	240	260						
07							255	235	220	205	190	210	210	215	250	215	230	240						
08							230	220	215	200	220	200	220	200	220	215	230	250						
09							245	225	215	210	210	205	210	205	225	210	235	250						
10							230	220	215	200	200	205	200	210	225	220	230	250						
11							230	215	205	210	205	200	200	220	220									
12							240	235	235	210	205	220	220	230	220	220	225	225	260					
13							270	235	210	215	200	200	210	220	210	230	230	240	250					
14							210	230	220	190	195	200	200	215	210	230	230	230	250					
15							235	240	220	185	215	210	220	230	225	220	230	240	240					
16							250	230	240	235	235	220	250	215	210	225	235	235	275					
17							280	250	220	220	200	205	200	210	225	220	240	235	260					
18							250	225	230	215	200			230	215	210	225	230	250					
19							245	225	205	210	200	210	205	205	210	220	210	225	250					
20							250	230	200	210	200	200	240	220	220	230	240	240	250					
21							250	245	220	205	205	200	210	215	210	230	225	240	240					
22							240	215	205	230	230	225	200	225	215	220	235	240	250					
23							235	230	230					230	220	220	220	225	260					
24						325	250	235	205	200	210	200	240	205	235	230	235	240	280					
25							270	250	220	220	200	240	240	220	230	220	220	230	250					
26							280	250	250	200	200	200	200	210	210	230	230	240	240					
27							245	225	220	220	190	200	205	215	225	220	215	220	240					
28							250	235	220	210	200	190	215	235	210	220	230	230						
29							245	230	220	205	200	190	200	215	220	220	225	230	240					
30						300	250	230	220	205	220		250	250	250	210			280					
31							230	250	220	200	220	230	205	210	210	220	230	240						
MED							250	230	220	210	200	205	210	215	220	220	230	235	250					
NO						2	25	30	30	30	29	28	29	31	31	31	29	29	26					

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 69
IONOSPHERIC DATA

h'E, Km, May 1956

75°W Mean Time

 Station Washington, D.C. Lot 38.7°N Long 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							109	109	101	109	105	101	105	101	101	105	111	109	119					
02							H 109	109	107	105	109	101	109		A	A	A	A	A					
03							A 109	105	101	101	101	101	111	106	101	109	109		A					
04							B 111	107	105	101	107	101	105	109	101	103	111		B					
05							S 109	109	103	105	105	101	101	101	101	101	105	119		B				
06							117	109	105	103	101	101	109	105	107	101	109	109	113					
07							113	105	101	101	101	101	101	101	101	91	103	111		A				
08							B 111	109	105	101	101	101	109	109	107	101	101	119						
09							H 119	109	105	103	101	103	105	107	101	107	105	107	115					
10							115	107	105	101	101	101	101	103	103	105	115	120	115					
11							A 131	A	A	101	101	101	103	101	101	103	117	109	117					
12							103	105	103	C	A	E	107	105	107	107	113	111	113					
13							115	107	103	101	101	101	101	101	105	105	109	105	119					
14							E 119	C	A	103	103	101	101	105	103	107	109	105	107	113				
15							117	105	105	105	105	101	101	109	101	109	109	109	119					
16							111	109	109	107	103	111	105	105	105	101	101	115	117					
17							B 125	B	115	105	109	109	111	119	109	105	105	103	109	123				
18							109	107	105	105	105				101	101	101	109	115	125				
19							H 115	H	105	A	A	U	A	U	A	U	A	101	107					
20							109	109	109	101	109	105	109	109	109	109	113	109		B	B			
21							111	109	105	103	109	101	101	101	101	105	109	109	121					
22							111	109	105	105	109	101	109	105	109	109	109	109	125					
23							115	109	109	105	105	109	101	101	103	101	107	109	119					
24							119	109	109	109	101	103	101	105	105	109	109	111	109	121				
25							115	101	101	101	105	105	111	111	111	111	111	111	121	129				
26							U 120	S	121	111	105	101	101	105	111	111	105	105	109	111	115			
27							B 115	105	101	101	101	101	101	101	101	101	101	101	119					
28							S 111	U	A	H	102	101	105	103	105	101	101	103	109	115				
29							119	111	101	105	101	101	105	101	105	109	109	109	111					
30							A 109	H	105	101	105	103	109	101	109	105	111		C	C	C			
31							109	109	103	101	101	101	101	101	101	101	103	103	111					
MED							112	109	105	103	101	101	102	105	105	105	109	109	117					
NO							3	26	30	30	29	29	29	30	30	30	30	28	29	23	3			

TABLE 70
IONOSPHERIC DATA

(M3000)F2, May 1956

75°W Mean Time

Station Washington, D.C. Lat 38.7°N Long 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	270	280	290	285	275	300	330	330	240	250	280	280	275	270	280	255	295	290	300	300	280	275	275	285
02	290	280	310	310	300	320	340	325	310	300	290	285	290	285	290	290	290	290	300	300	290	285	290	290
03	290	280	290	295	290	310	290	330	310	300	290	290	280	275	280	280	290	285	280	300	290	285	275	270
04	270	270	270	290	280	290	310	305	300	310	300	285	275	290	290	290	290	280	280	300	290	280	270	280
05	275	270	260	250	260	275	305	310	290	290	280	290	280	275	270	285	280	290	300	300	280	280	280	280
06	280	260	275	275	280	290	300	290	310	290	285	290	285	285	280	290	290	290	290	290	300	300	290	275
07	270	265	265	270	270	270	300	300	310	295	285	285	285	285	285	290	280	285	300	300	310	275	290	280
08	270	290	280	285	285	300	305	290	285	290	290	290	280	275	275	280	290	300	290	290	285	280	275	265
09	265	270	280	280	275	285	275	305	310	290	285	275	280	280	280	280	280	290	300	305	290	280	275	275
10	290	275	270	270	275	305	315	310	285	295	280	280	285	250	280	280	280	280	285	300	290	290	290	270
11	275	275	275	290	285	290	305	310	300	300	270	280	270	280	280	270	275	285	285	280	290	265	270	280
12	260	250	260	265	260	270	270	280	250	245	225	255	235	235	255	260	260	250	260	270	260	280	270	260
13	235	225	240	240	260	290	300	285	325	305	290	280	280	290	260	280	280	290	280	280	270	275	285	270
14	290	280	290	270	280	310	315	300	295	280	265	270	250	265	265	250	265	280	280	280	280	280	280	265
15	265	260	270	280	270	270	290	260	250	220	230	220	235	230	240	250	255	260	275	275	265	265	260	260
16	255	250	250	240	285	300												230	250	310	250	250	240	270
17	230	250	240	260	250	280	220		200							200	225	270	270	280	270	280	280	280
18	260	260	260	250	260	290		275	295	270	260			255	265	280	260	270	285	285	275	275	270	275
19	270	270	270	280	280	300	300	310	310	305	280	275	270	280	275	280	280	285	285	290	280	275	280	
20	260	260	270	270	280	280	280		230	275	250	290	260	260	245	270	265	260	280	290	290	270	250	260
21	255				260	300	300	280	260	230	260	240	240	240	260	260	270	270	280	280	280	270	270	260
22	280	270	280	265	270	290	330	300	290	280	285	270	270	260	260	270	280	275	280	280	280	290	280	
23	275	285	285	280	275	320	295	320	300	300	290	265	265	285	285	290	290	280	270	260	265	305	265	265
24	280	250	250	250	280	265	250										220	230	250	250	260			
25	245	240		320	270	300	250						230	210	230	250	265	280	280	290	285	270	280	275
26	260	270	275	260	270	290	290	290	290	300	290	280	275	280	280	270	280	280	290	300	285	290	285	290
27	275	280	290	265	275	300	310	300	285	290	270	265	270	275	280	285	285	275	290	290	300	270	265	260
28	250	265	250	265	265	280	285	280	285	275	240	230	255	265	270	275	285	290	290	290	290	285	275	275
29	275	290	280	280	280	305	310	310	310	290	300	290	280	280	270	280	270	270	280	290	280	300	270	285
30	270	270	280	270	275	270	260	290	220	230		235	235	220	255	255			270	285	275	285	280	275
31	280	280	280	290	280	300	300	310	260	295	295	290	295	280	290	280	290	285	295	290	290	275	270	285
MED	270	270	275	270	275	290	300	300	290	290	280	280	270	275	270	280	280	280	280	290	280	280	275	275
NO	31	29	29	30	31	31	31	31	30	30	31	30	30	31	31	31	30	30	31	31	30	31	30	29

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 71
IONOSPHERIC DATA

(M3000)FI, May 1956

75°W Mean Time

Station Washington, D.C. Lat 38.7°N Long 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							L	L	360	350	355	350	355	345	360	340	365	L	L					
02							Q	L	L	L	H	S	H	380	350	380		L	L	L				
03							L	L	H	H	H	H	H	380	350			L	L	L				
04							L	L	L	370	370	350	345	360	365	360		H	L	L				
05							Q	L	L	L	H		H	H		L		L	L	L				
06							A	L	L	370	L	A	H	A		340	345	L	L	L				
07							L	L	L	L	H		H				A	L	A					
08							Q	A	A		U	H	H	H	H	U	C	H	L					
09							L	L	L	L	U	C	L	U	L	H	U	H	L	L	A			
10							Q	L	A	L	L	L		380	390	375	365	L	L	L	L			
11							Q	L	L		H	H		H	H		A	A	A					
12							L	U	L	U	A	I	C	H	U	A		H	H	U	L			
13							355	350		350	365	350	350	360	365	350	335	320	L	L				
14							U	L	U	L	U	L	U	L	U	L	U	L	L	L				
15							H	H	U	A	U	H	U	F	F	U	H	I	A	F	U	F	H	L
16							365	375	365	370	350	370	375	355	350	360								
17							U	H	F	U	H		H		H		H				Q			
18							330	360	375	385	380	360	370	360	360	360	360	325	330					
19							370	370	360	370	385	390	375	385	360	360	360	350	320					
20							320	340	360	385	400	400	400	380	370	360	340	320	305					
21							300	335	350	360	350		C	C	H					Q				
22							L	L		H	H			360	355	350	330	330	A					
23							370	390		380	370	330	340	365	350									
24							F	H	H		H									L	Q			
25							330	350	360	370	380	340	320	350	350	350	330	320						
26							340	340	370	380	390	390	370	360	360	350	340	330	L					
27							L	L		H	U	A	U	A	H					L				
28							360	360	350	340	340	340	350	340	350	350								
29							L	L	L	U	A	A	A	A	L				L	L				
30							290	340	360	380	400	380	400	360	380	370	360	340	320					
31							F						F			U	A			L				
32							340	350	380	385	390	380	380	310	375	360	350	330						
33							330	A	A		370	360	370	360	360	340	330	340	L	A				
34							Q	H		360	370	H	H	H	H		H		L	Q				
35							Q		H	H	H	H	H	H	H				A	Q				
36							Q	L	L															
37									360	370	380	370	340	350	340	330	330	360						
38							L	U	A	U	A	U	A		A		C	C						
39							310	340	360	380	380	390	365		360	365				330				
40							L	L		360	380	380	370	390	370	370			L	A				
41																								
MED							330	350	360	370	380	365	360	360	360	350	350	335	320					
NO							1	12	12	15	2	23	25	29	28	30	27	21	13	6				

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

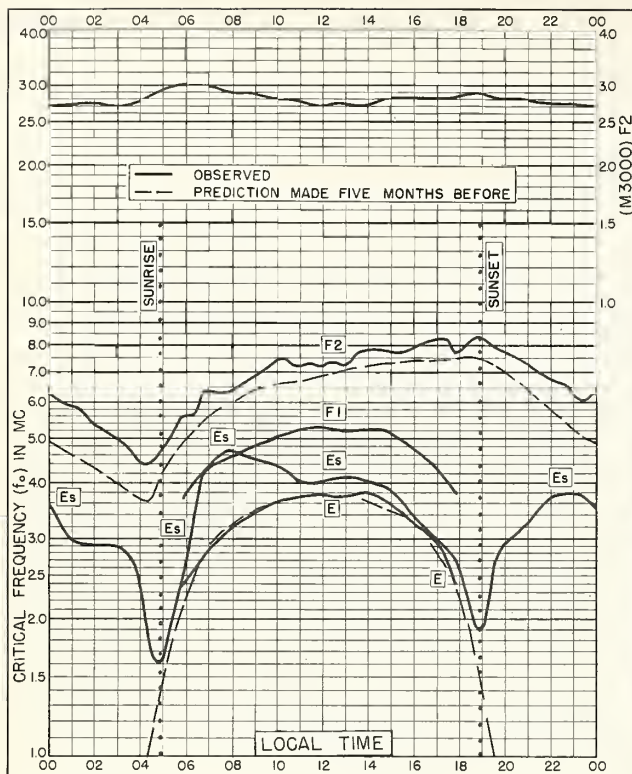


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W

MAY 1956

NBS 503

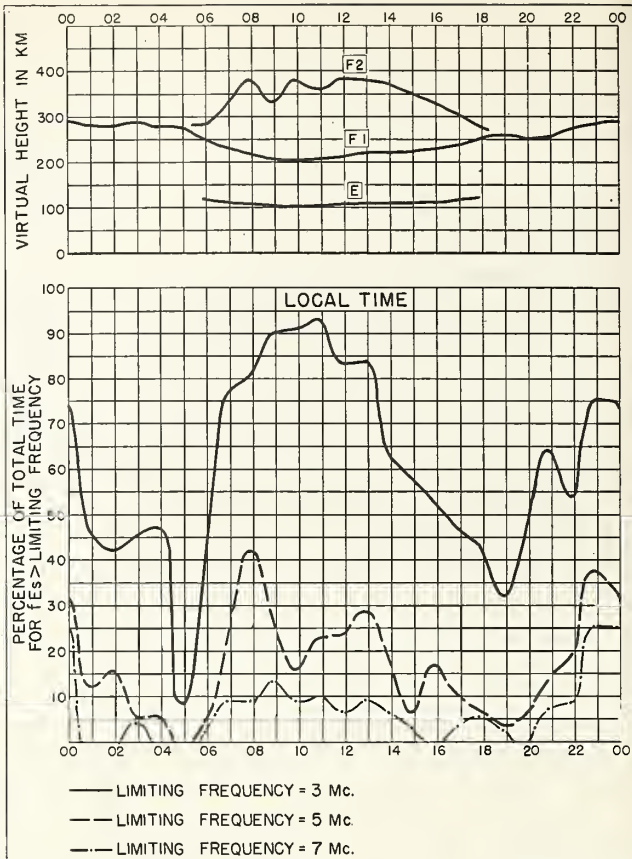


Fig. 2. WASHINGTON, D. C.

MAY 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

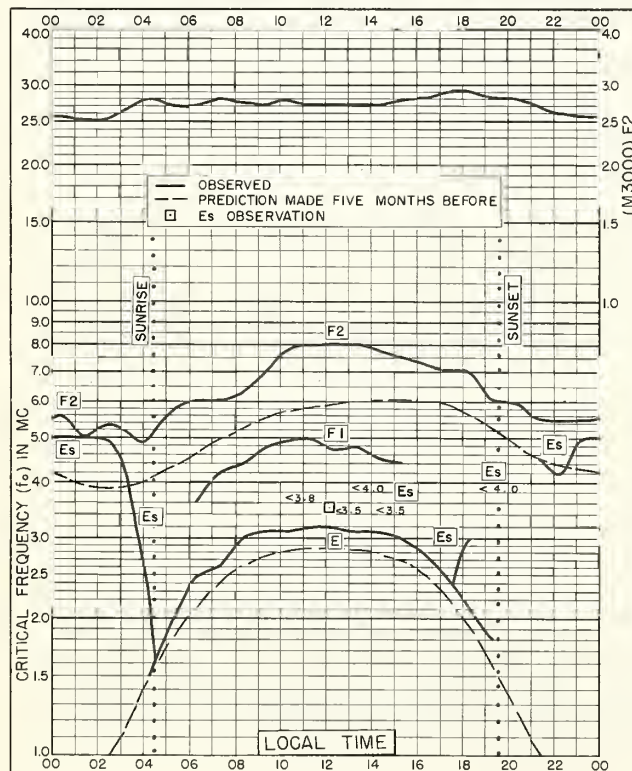


Fig. 3. KIRUNA, SWEDEN
67.8°N, 20.3°E

APRIL 1956

NBS 503

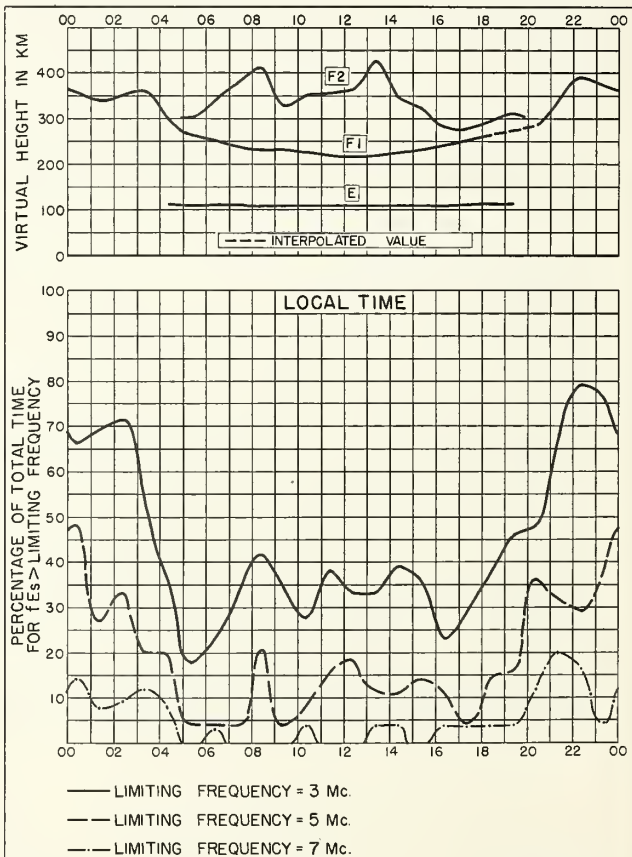
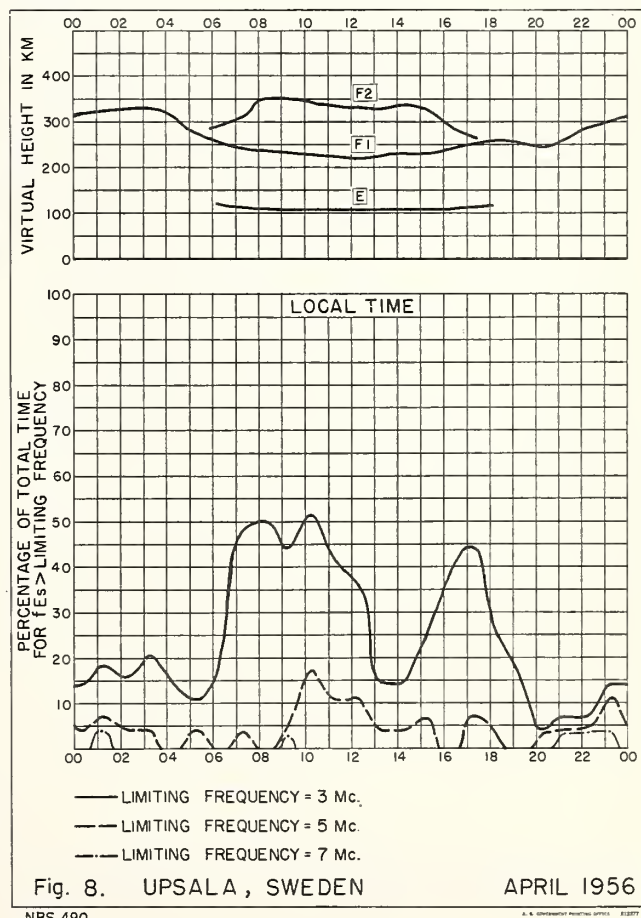
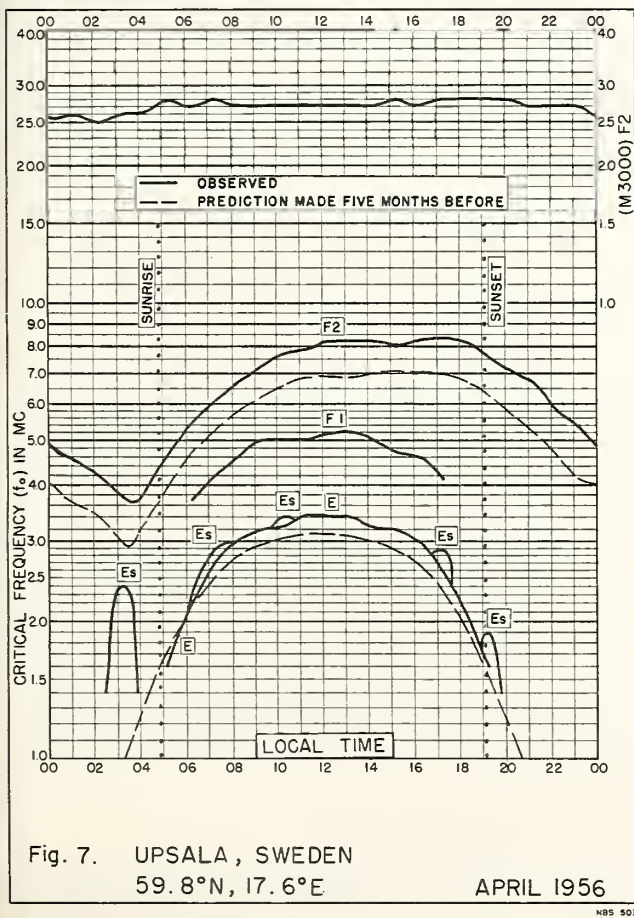
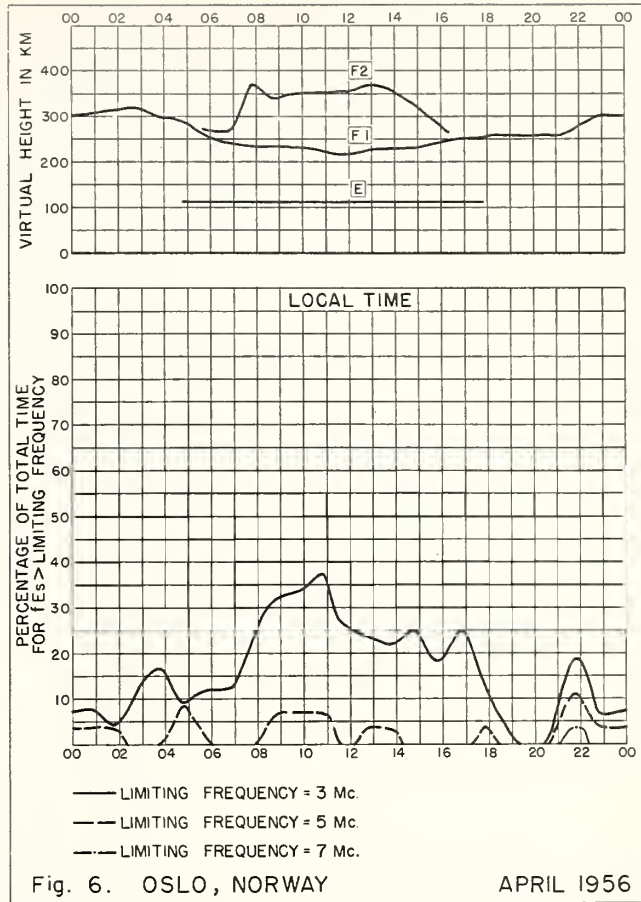
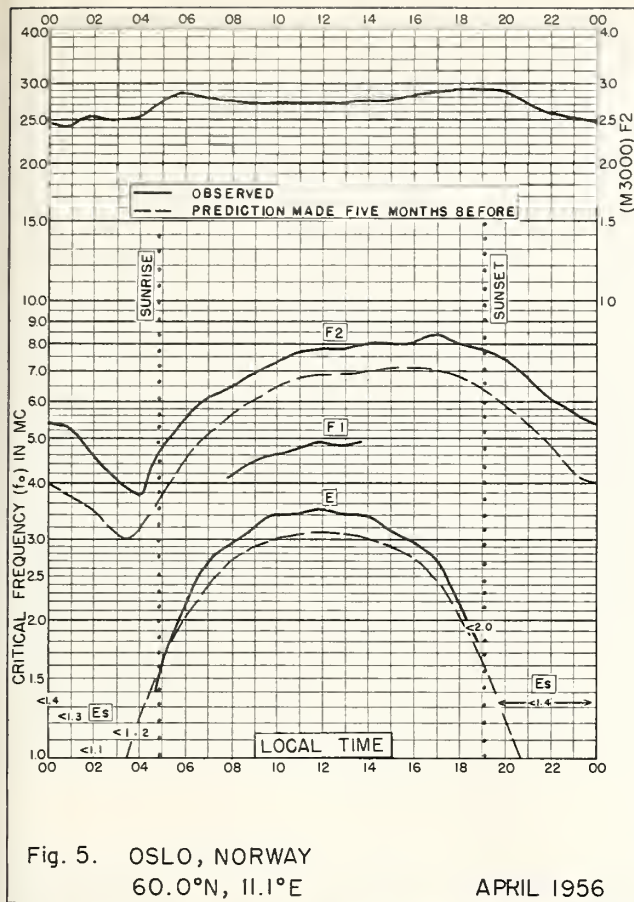


Fig. 4. KIRUNA, SWEDEN

APRIL 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957



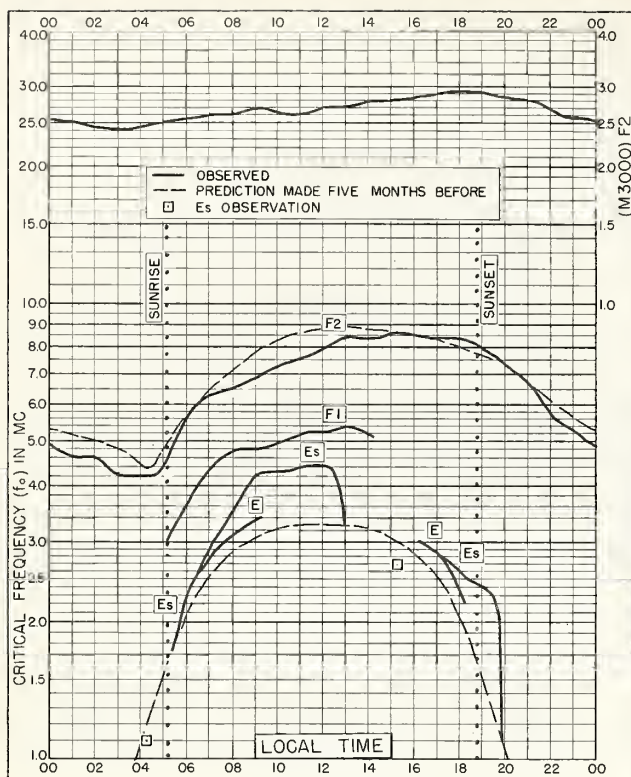


Fig. 9. ADAK, ALASKA
51.9°N, 176.6°W

APRIL 1956

NBS 503

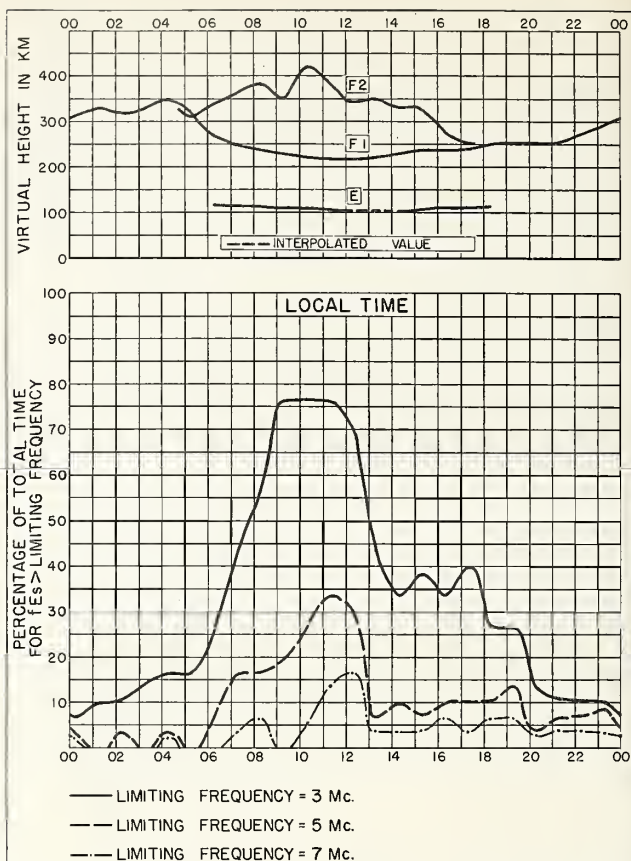


Fig. 10. ADAK, ALASKA

APRIL 1956

NBS 490

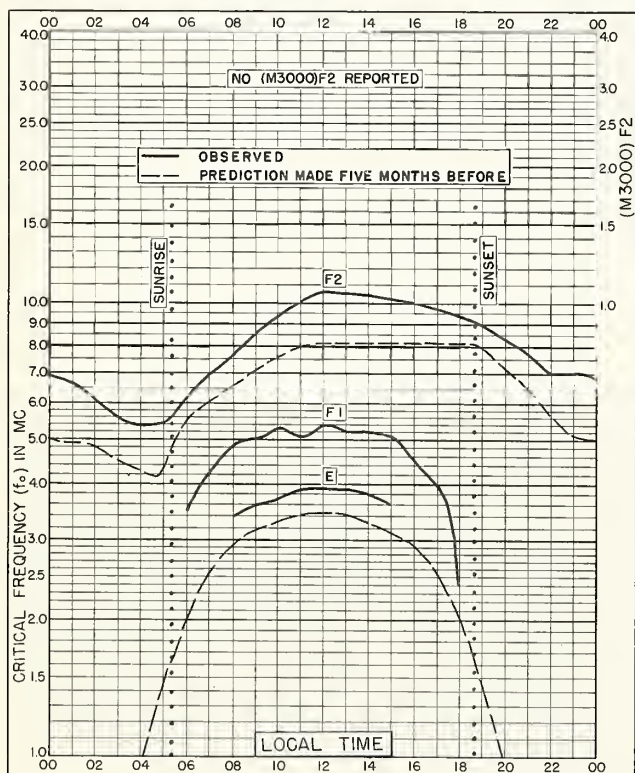


Fig. 11. GRAZ, AUSTRIA
47.1°N, 15.5°E

APRIL 1956

NBS 503

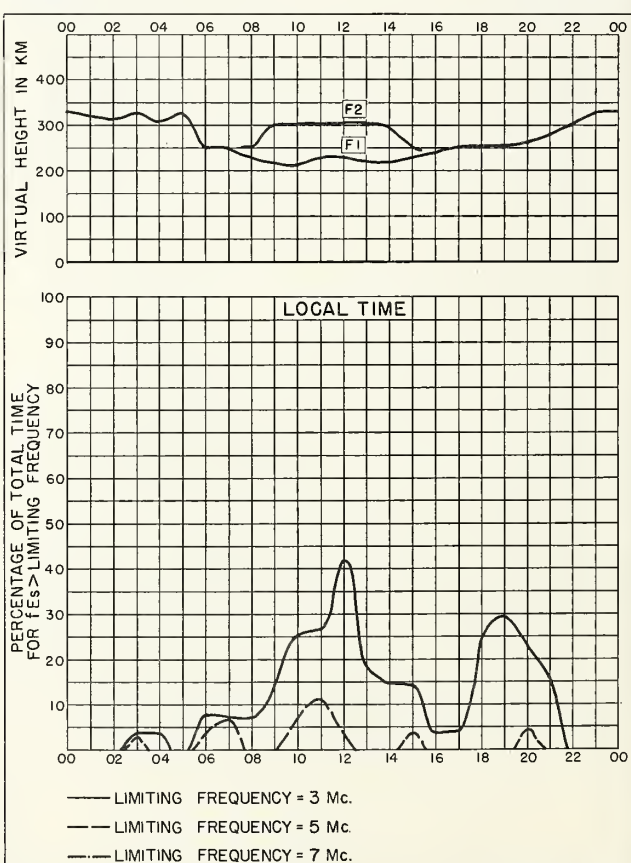


Fig. 12. GRAZ, AUSTRIA

APRIL 1956

NBS 490

N. S. INTERNATIONAL REFERENCE OFFICE 228077

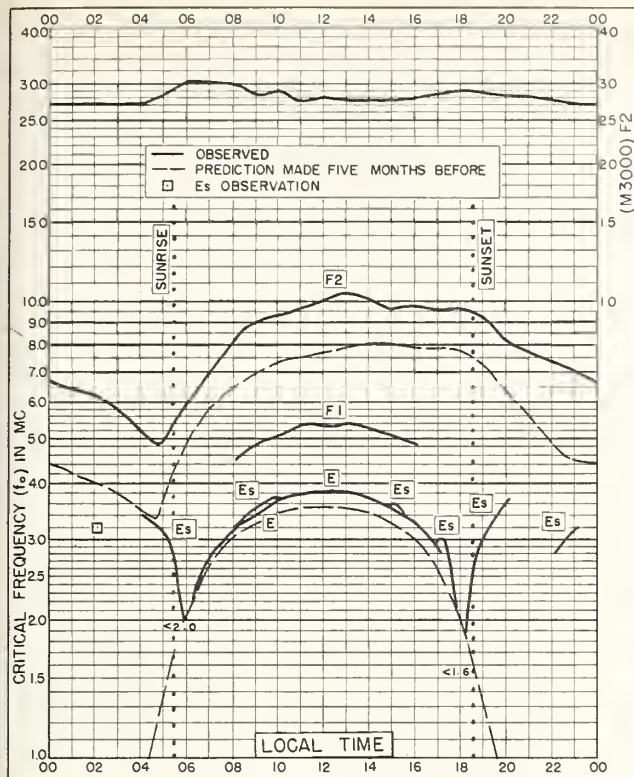


Fig. 13. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W
APRIL 1956

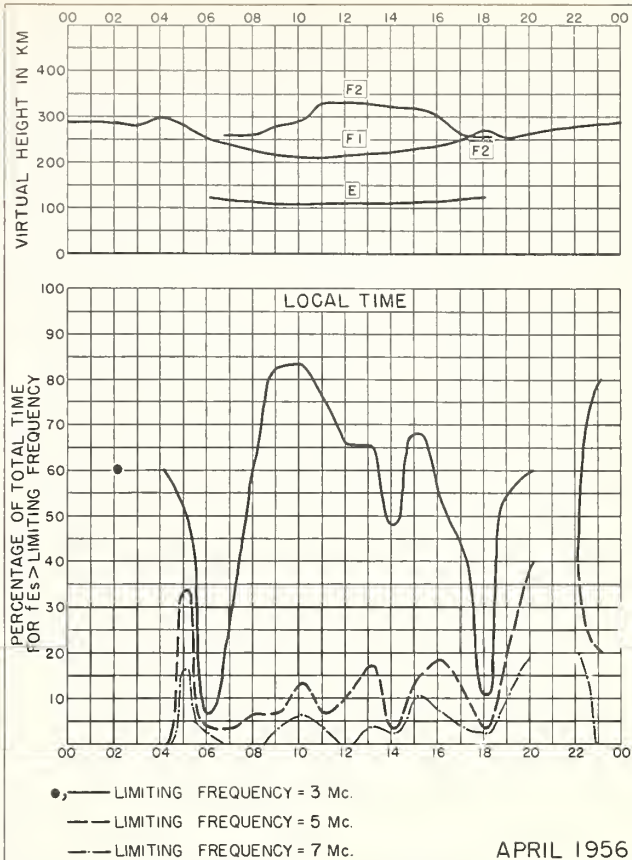


Fig. 14. FT. MONMOUTH, NEW JERSEY
APRIL 1956

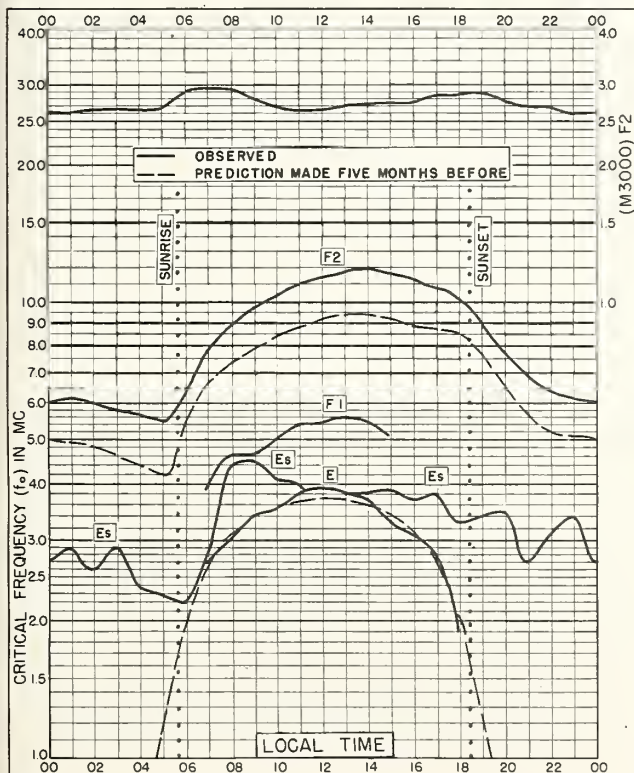


Fig. 15. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W
APRIL 1956

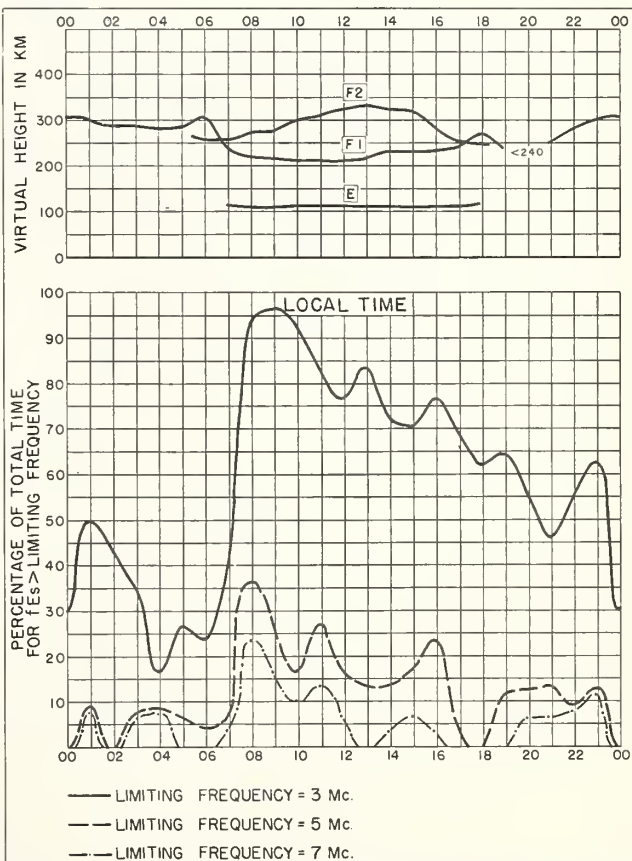
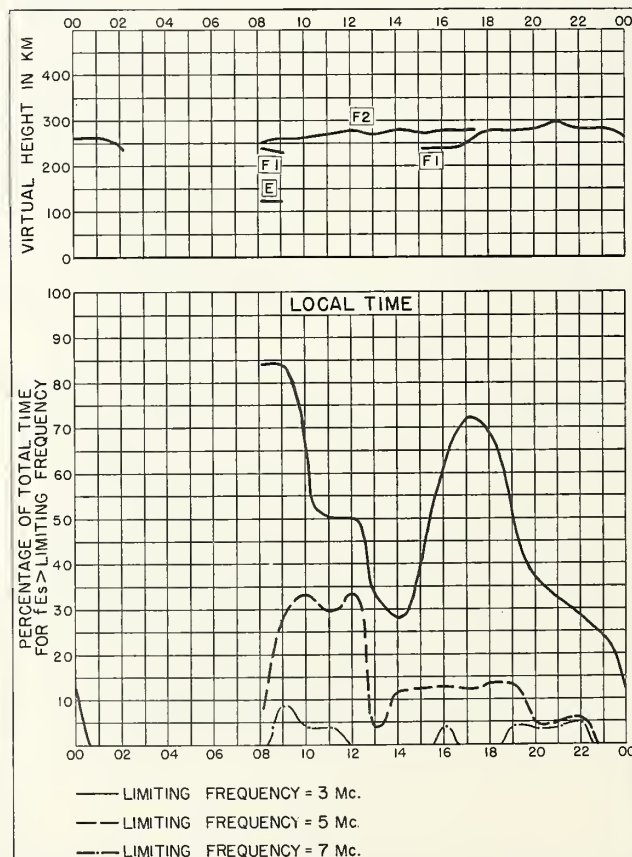
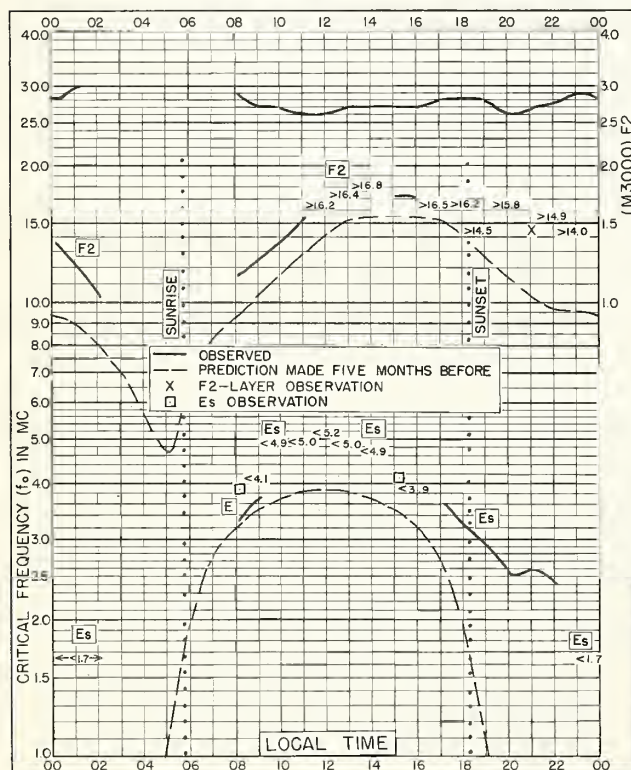
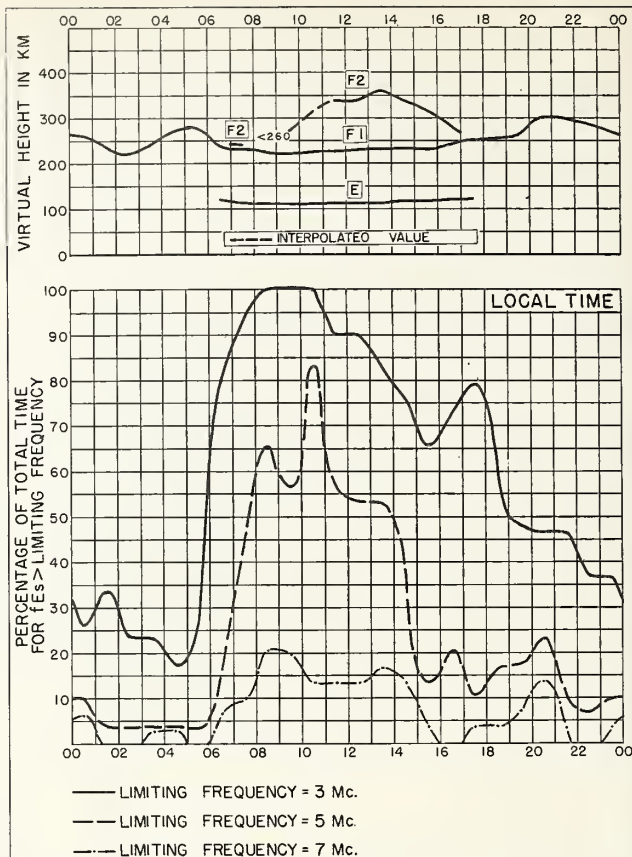
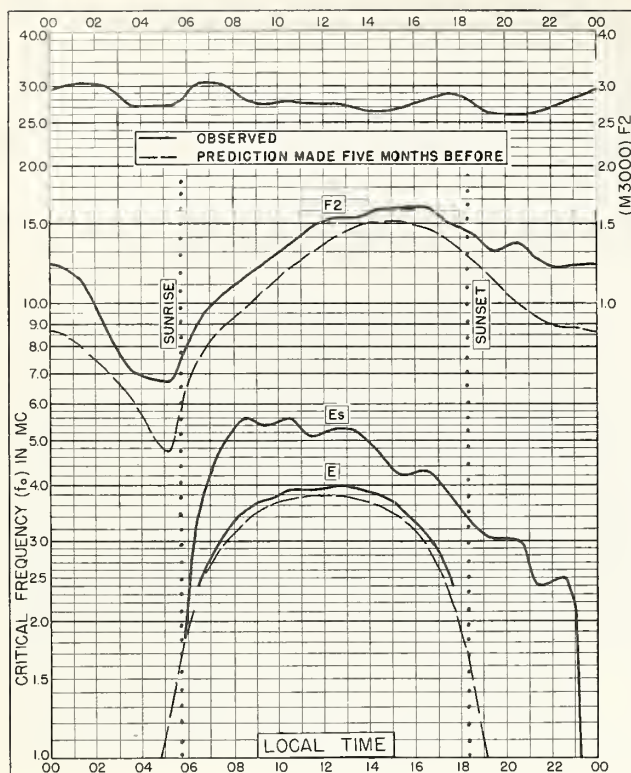


Fig. 16. WHITE SANDS, NEW MEXICO
APRIL 1956



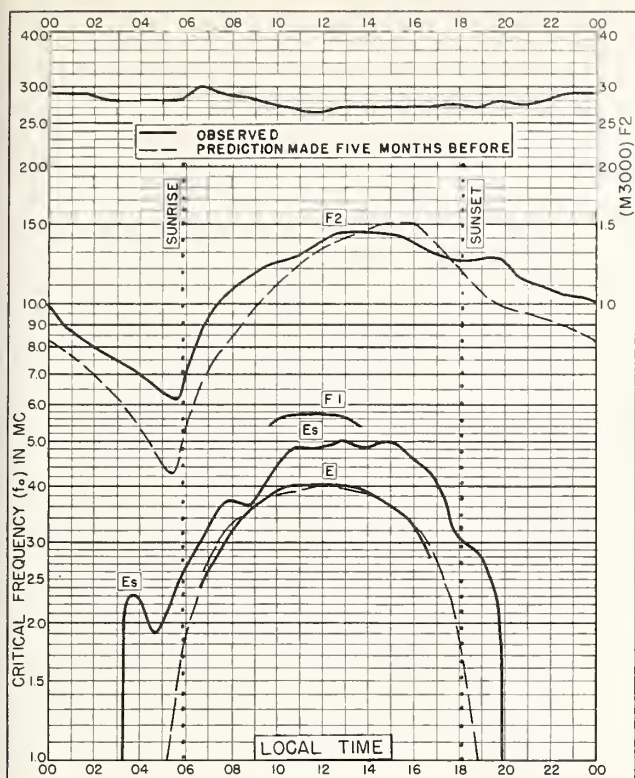


Fig. 21. PANAMA CANAL ZONE
9.4°N, 79.9°W

APRIL 1956

NBS 503

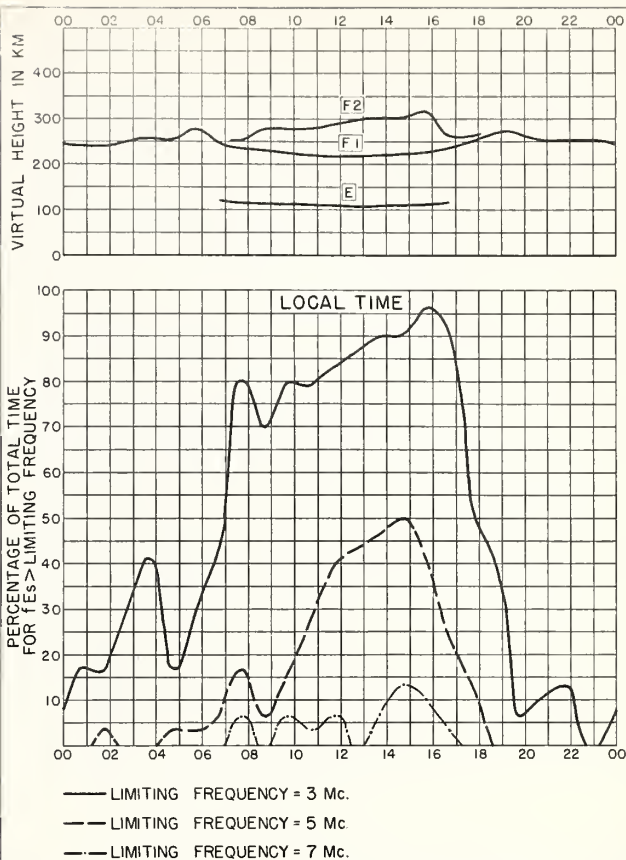


Fig. 22. PANAMA CANAL ZONE

APRIL 1956

NBS 490

NBS 503

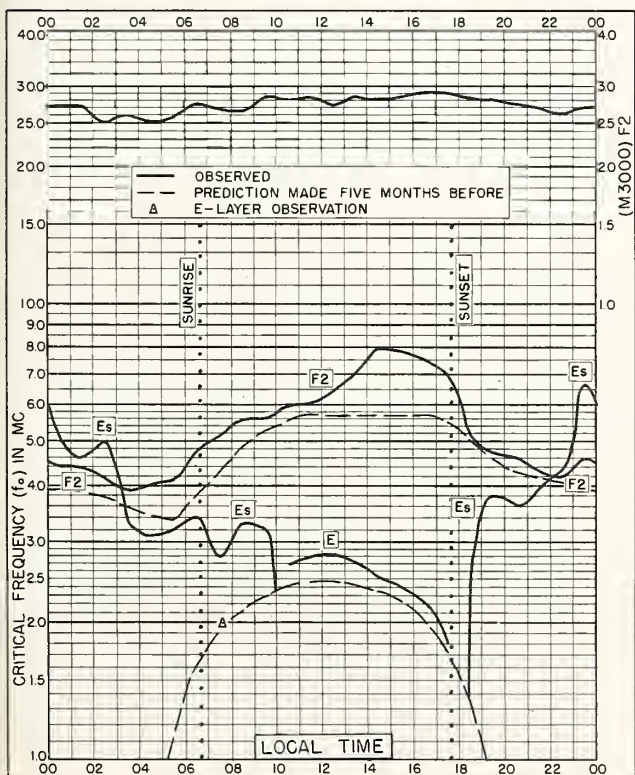


Fig. 23. POINT BARROW, ALASKA
71.3°N, 156.8°W

MARCH 1956

NBS 503

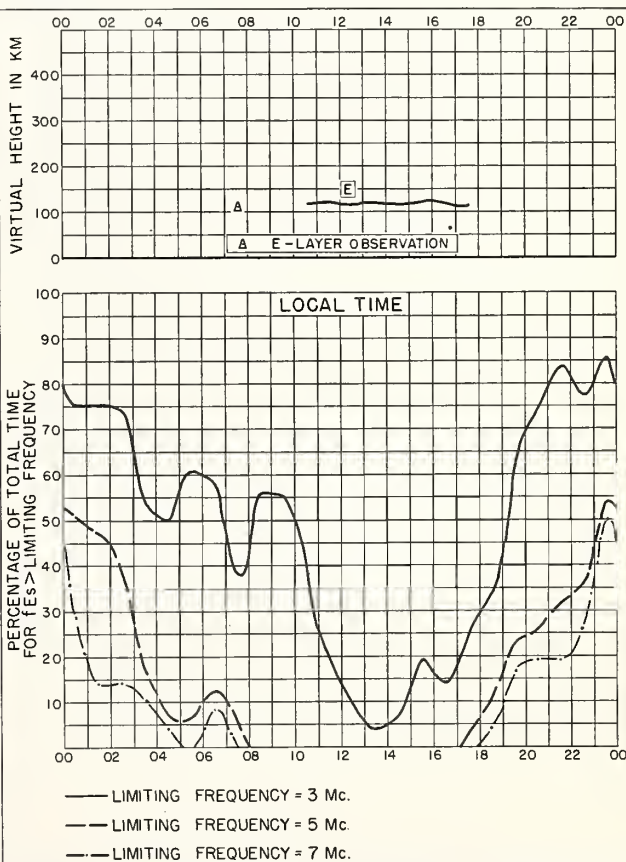


Fig. 24. POINT BARROW, ALASKA

MARCH 1956

NBS 490

NBS 503

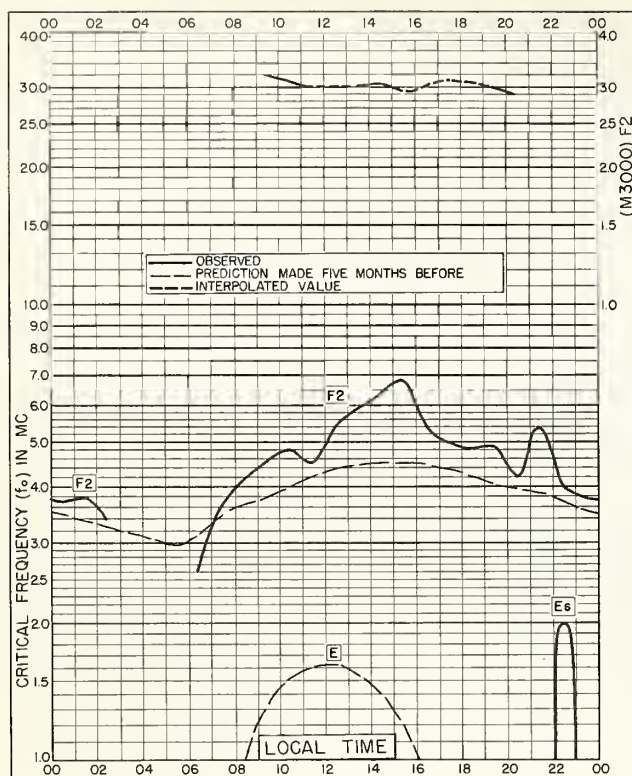


Fig. 25. THULE, GREENLAND
77.0°N, 69.0°W FEBRUARY 1956

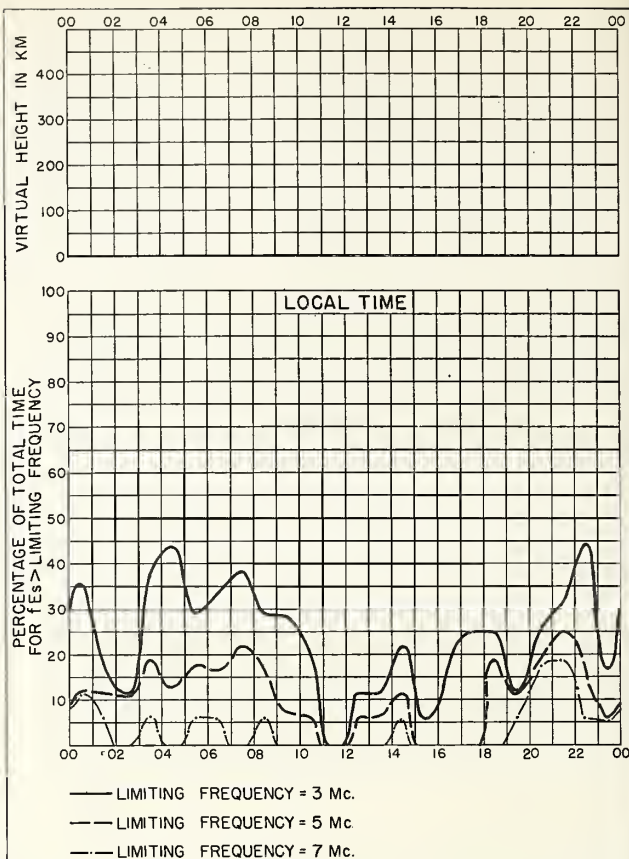


Fig. 26. THULE, GREENLAND FEBRUARY 1956

NBS 490

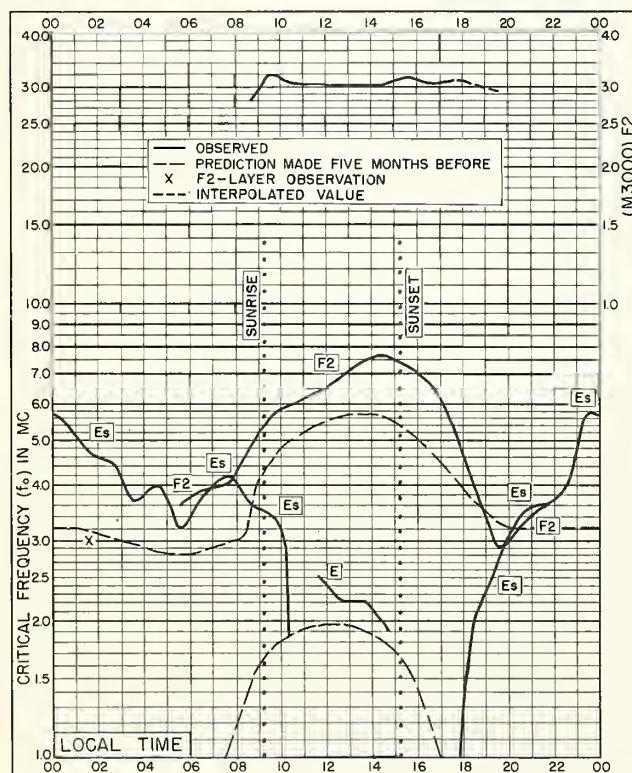


Fig. 27. POINT BARROW, ALASKA
71.3°N, 156.8°W FEBRUARY 1956

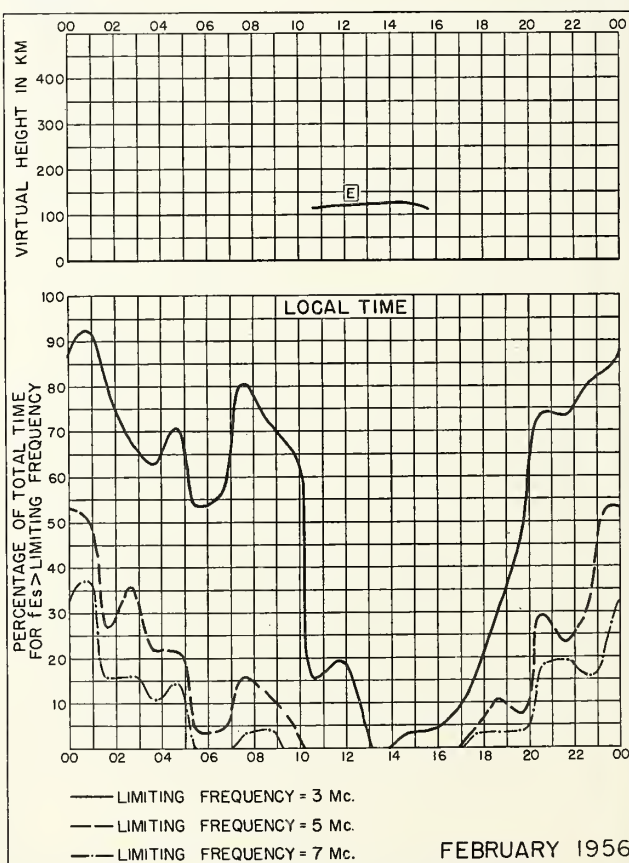


Fig. 28. POINT BARROW, ALASKA

NBS 490

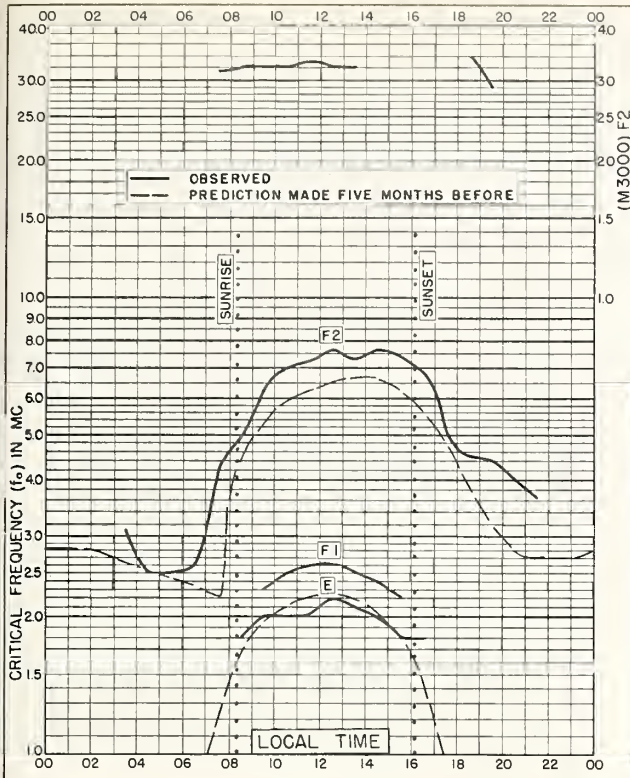


Fig. 29. LULEA, SWEDEN
65.6°N, 22.1°E
FEBRUARY 1956

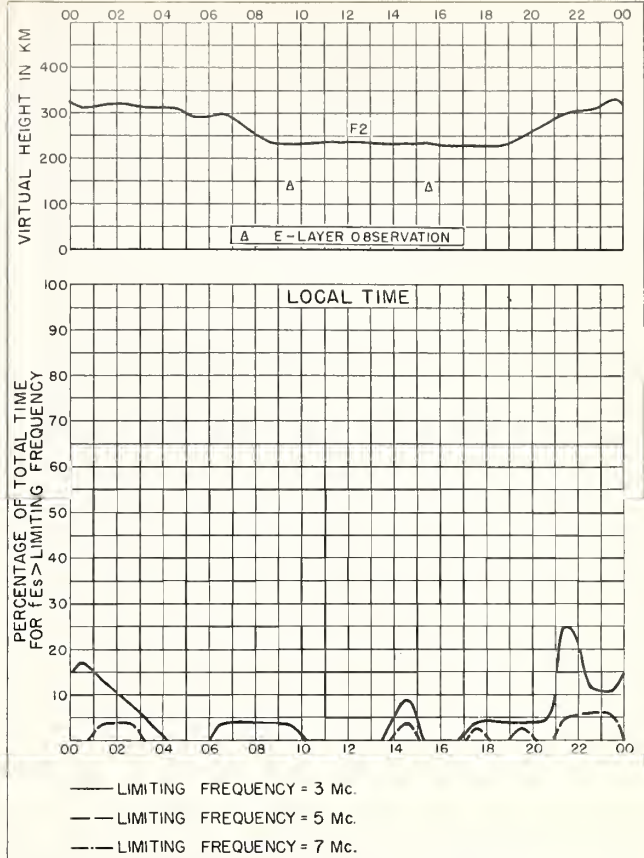


Fig. 30. LULEA, SWEDEN
FEBRUARY 1956

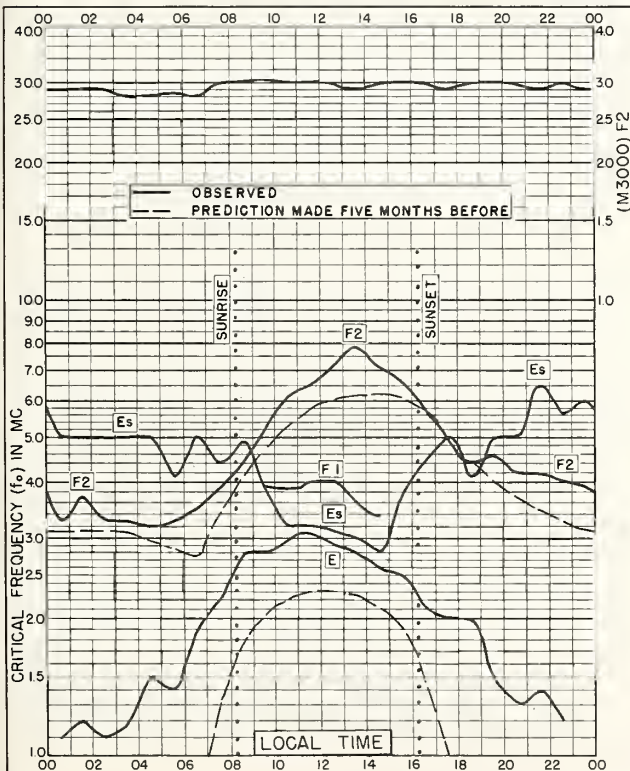


Fig. 31. BAKER LAKE, CANADA
64.3°N, 96.0°W
FEBRUARY 1956

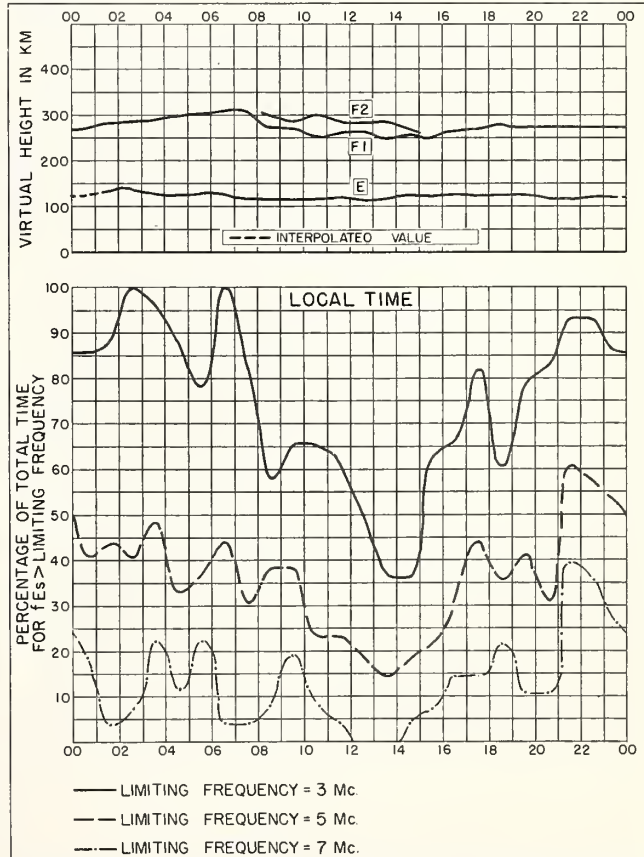


Fig. 32. BAKER LAKE, CANADA FEBRUARY 1956

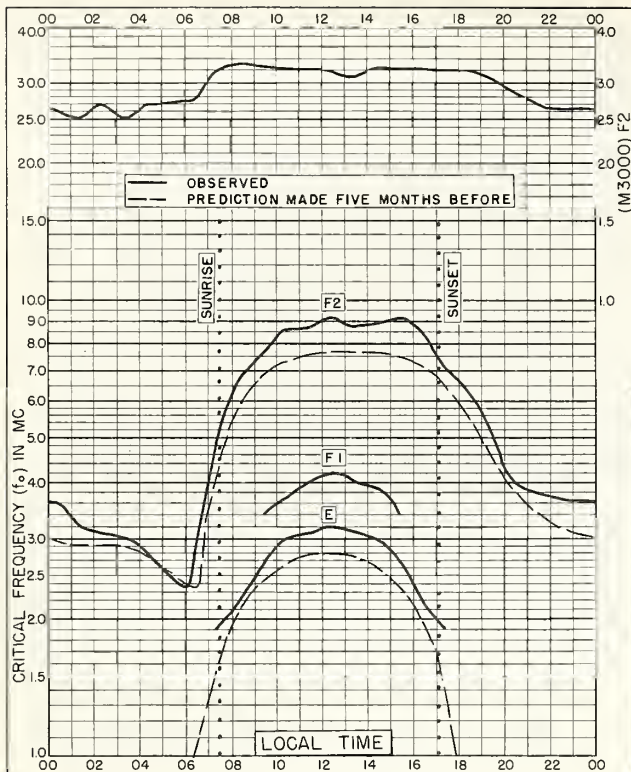


Fig. 33. De BILT, HOLLAND
52.1°N, 5.2°E

FEBRUARY 1956

NBS 503

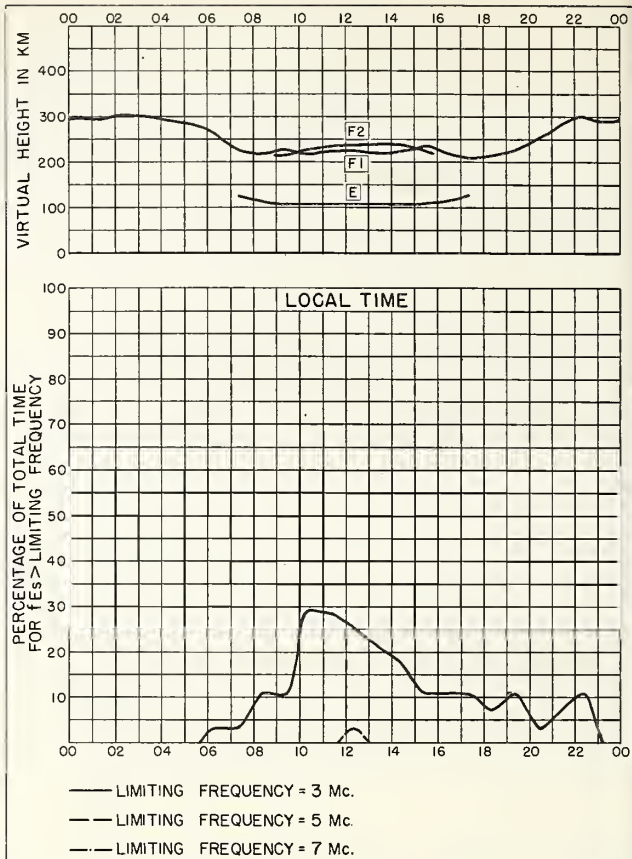


Fig. 34. De BILT, HOLLAND

FEBRUARY 1956

NBS 490

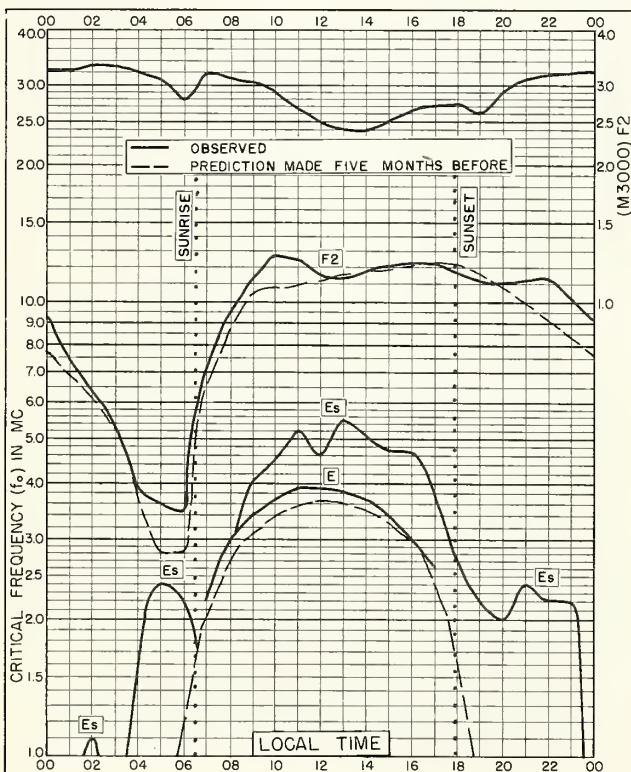


Fig. 35. BAGUIO, P. I.
16.4°N, 120.6°E

FEBRUARY 1956

NBS 503

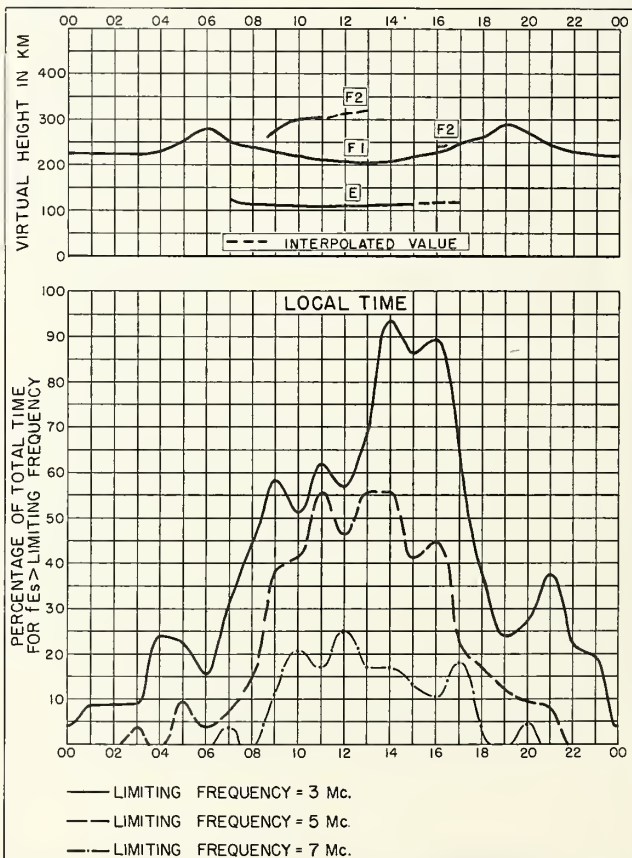


Fig. 36. BAGUIO, P. I.

FEBRUARY 1956

NBS 490

N. S. INTERNATIONAL PHYSICAL OFFICE 153077

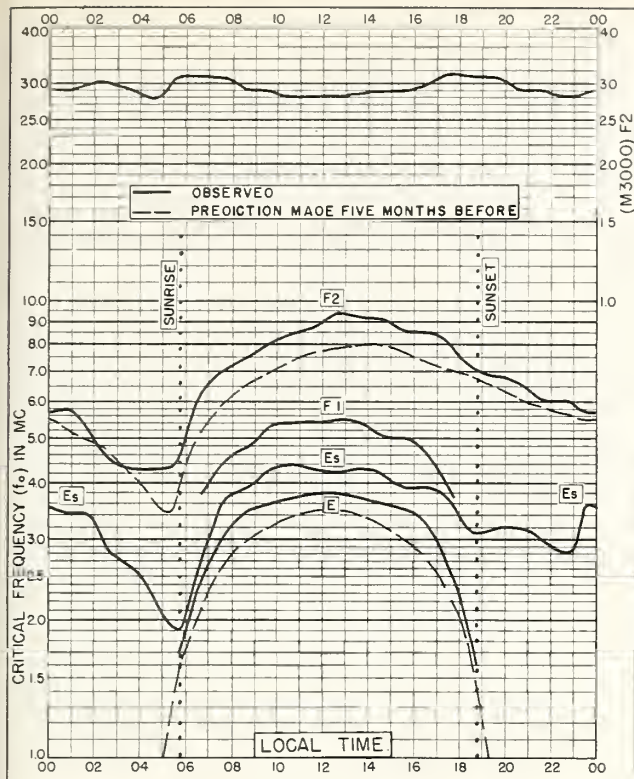


Fig. 37. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E FEBRUARY 1956

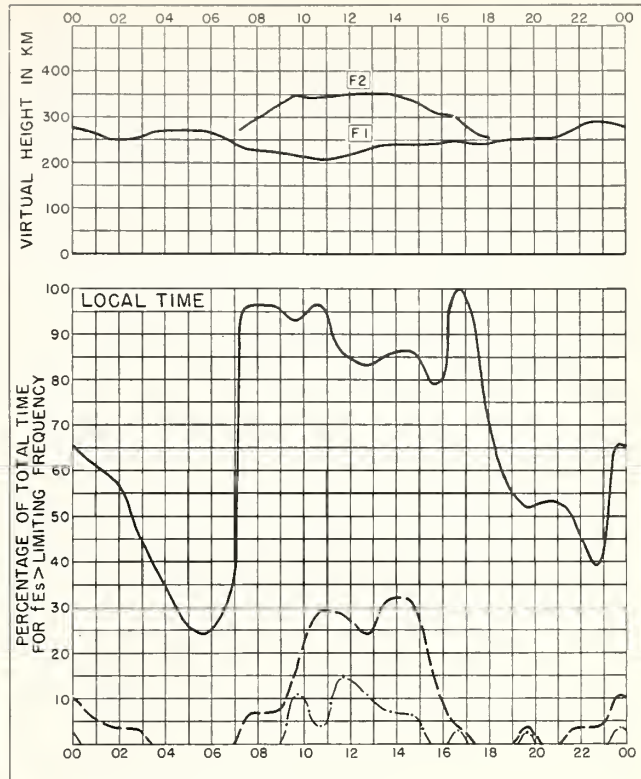


Fig. 38. WATHEROO, W. AUSTRALIA
FEBRUARY 1956

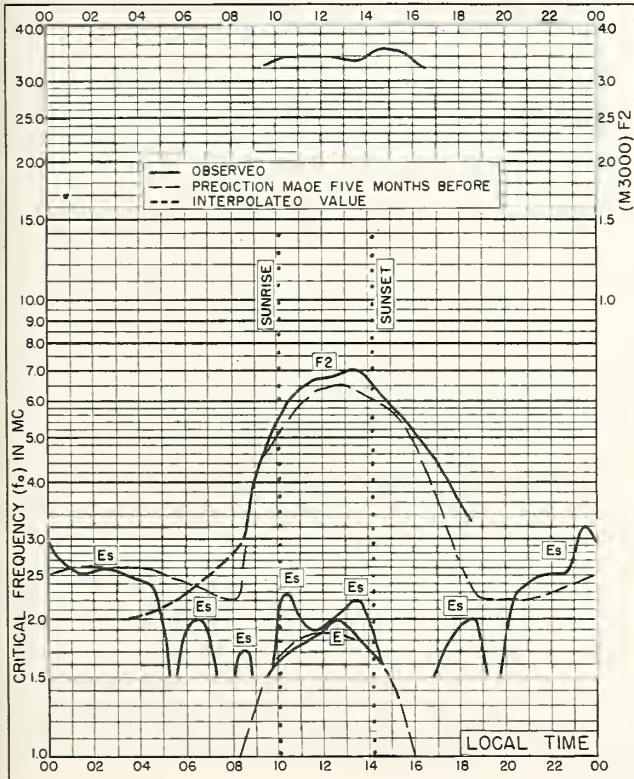


Fig. 39. LULEA, SWEDEN
65.6°N, 22.1°E JANUARY 1956

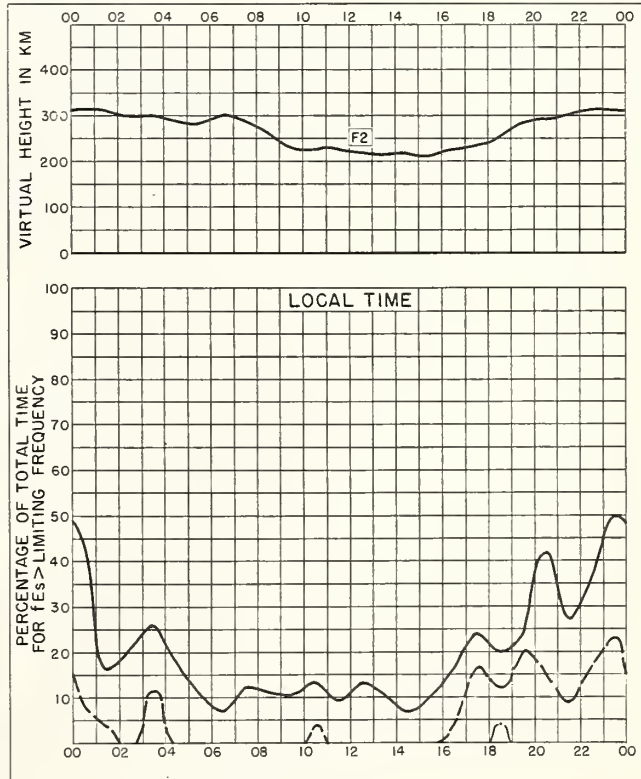


Fig. 40. LULEA, SWEDEN
JANUARY 1956

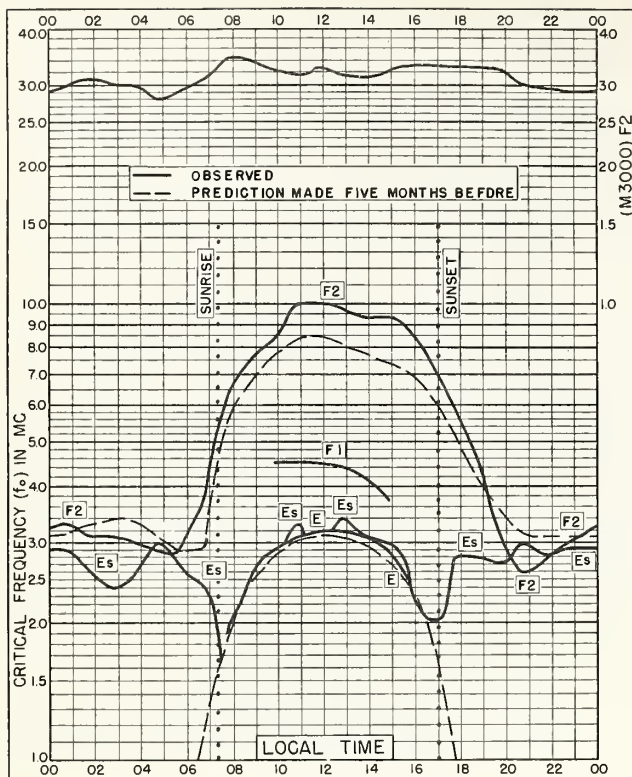


Fig. 41. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JANUARY 1956

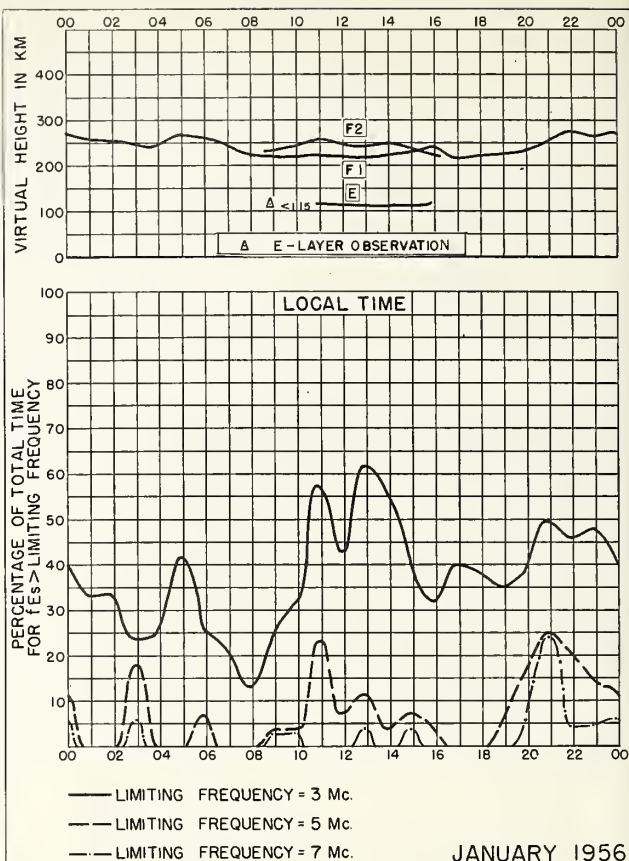


Fig. 42. SAN FRANCISCO, CALIFORNIA JANUARY 1956

NBS 490

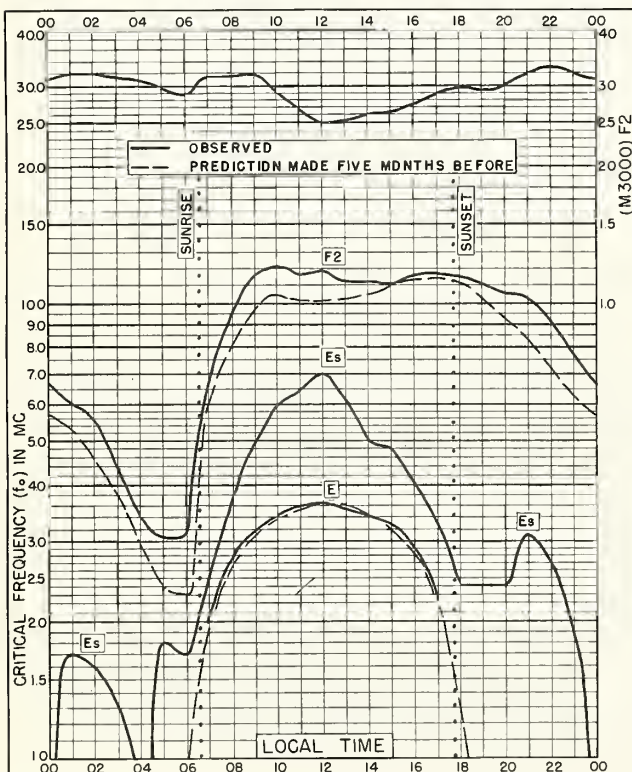


Fig. 43. BAGUIO, P. I.
16.4°N, 120.6°E JANUARY 1956

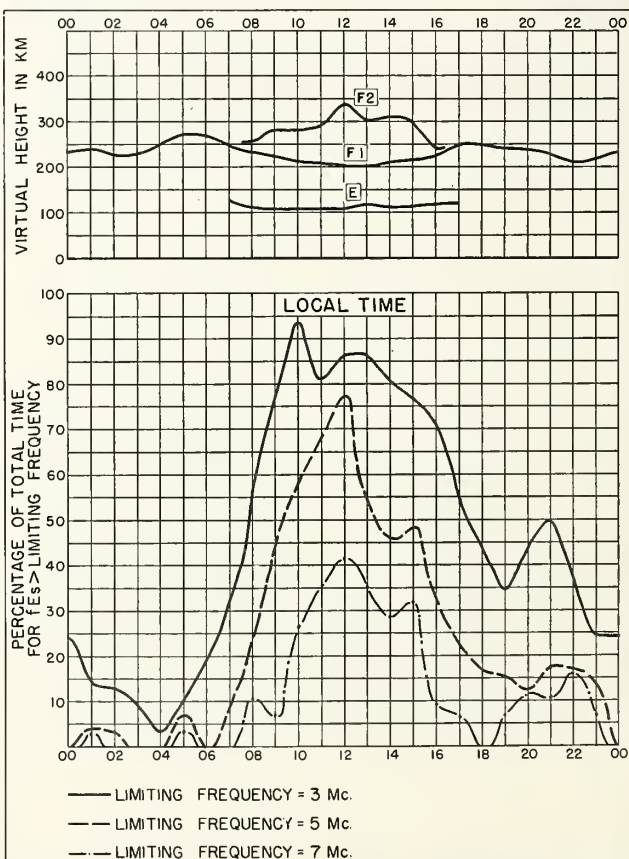


Fig. 44. BAGUIO, P. I. JANUARY 1956

NBS 490

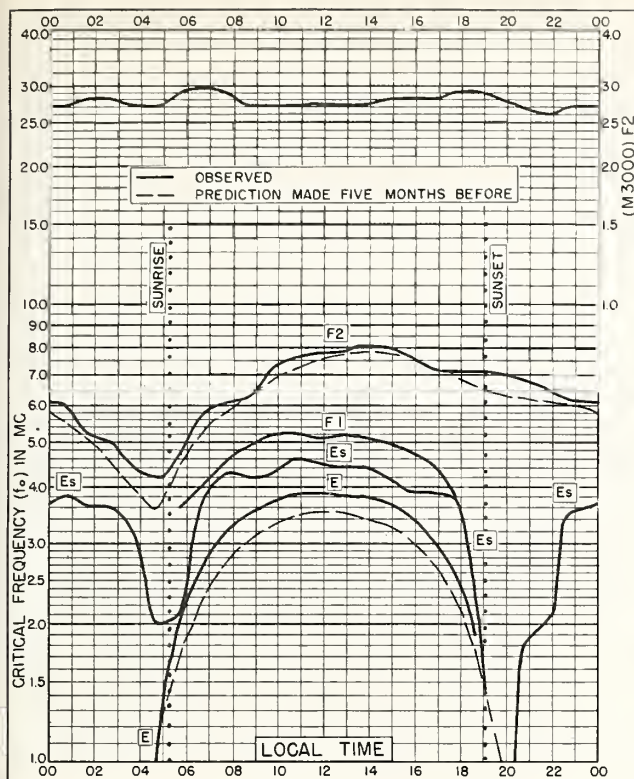


Fig. 45. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E JANUARY 1956

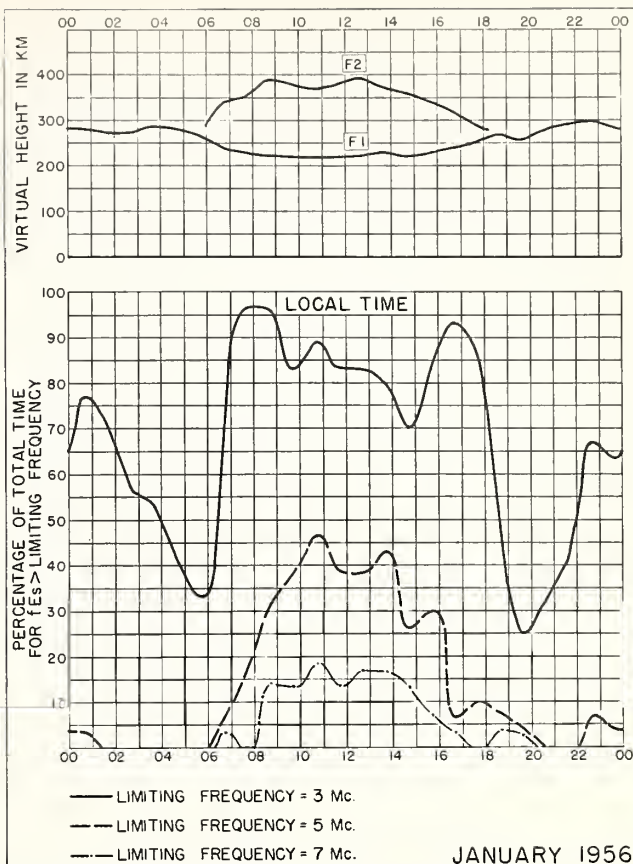


Fig. 46. WATHEROO, W. AUSTRALIA

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 513777

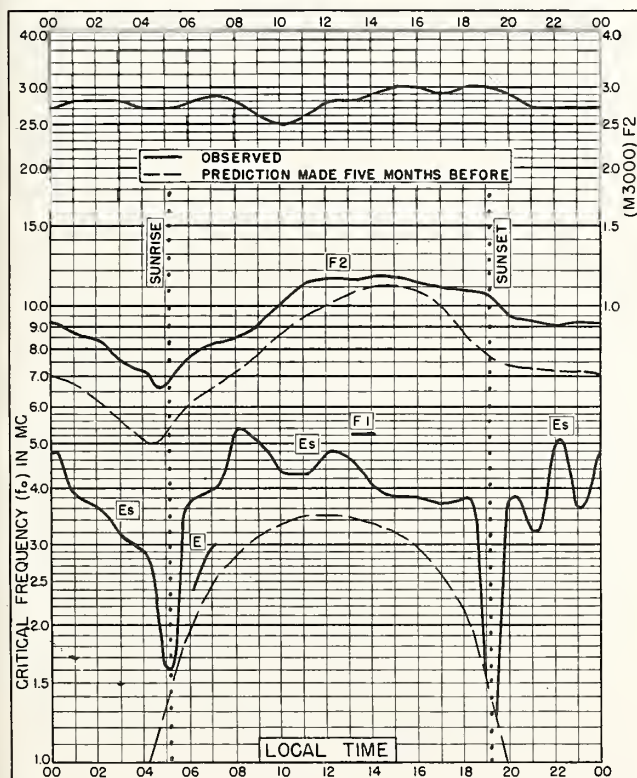


Fig. 47. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W JANUARY 1956

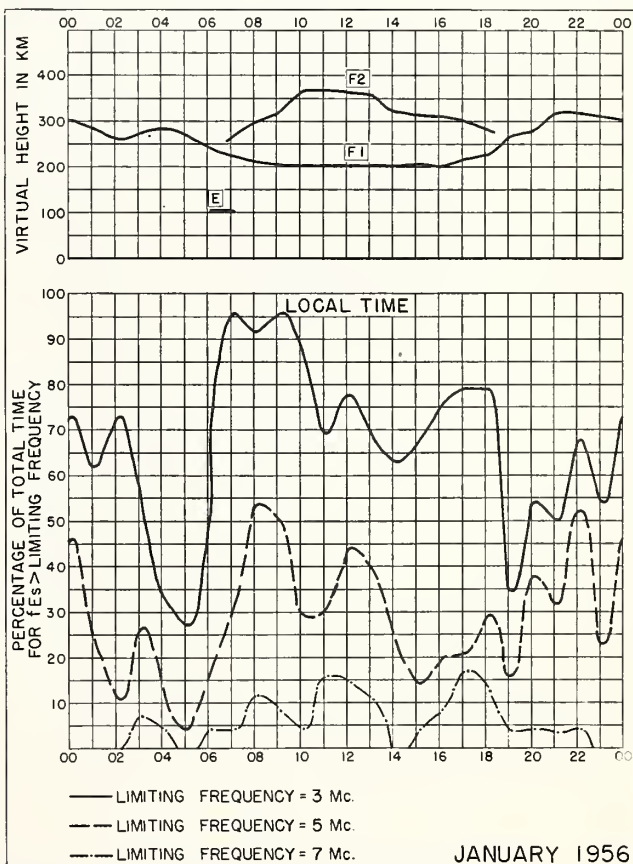


Fig. 48. BUENOS AIRES, ARGENTINA

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 513777

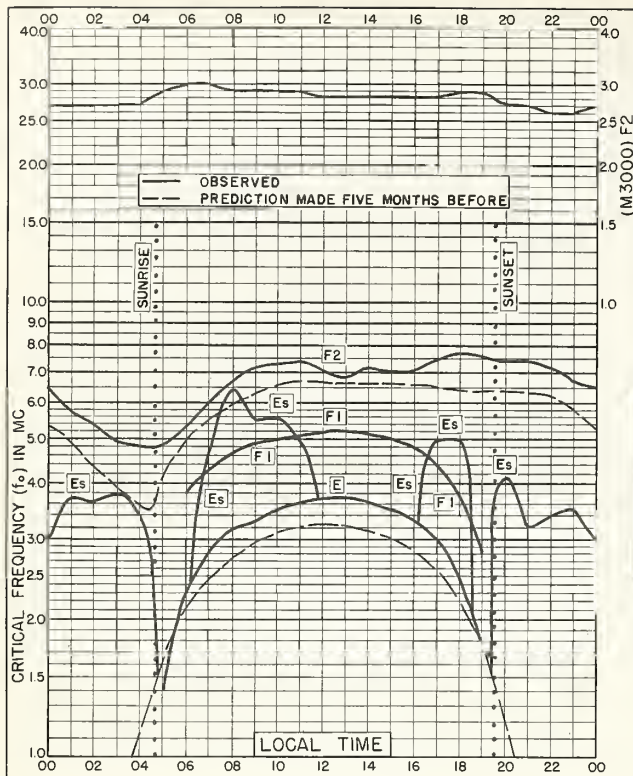


Fig. 49. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E JANUARY 1956

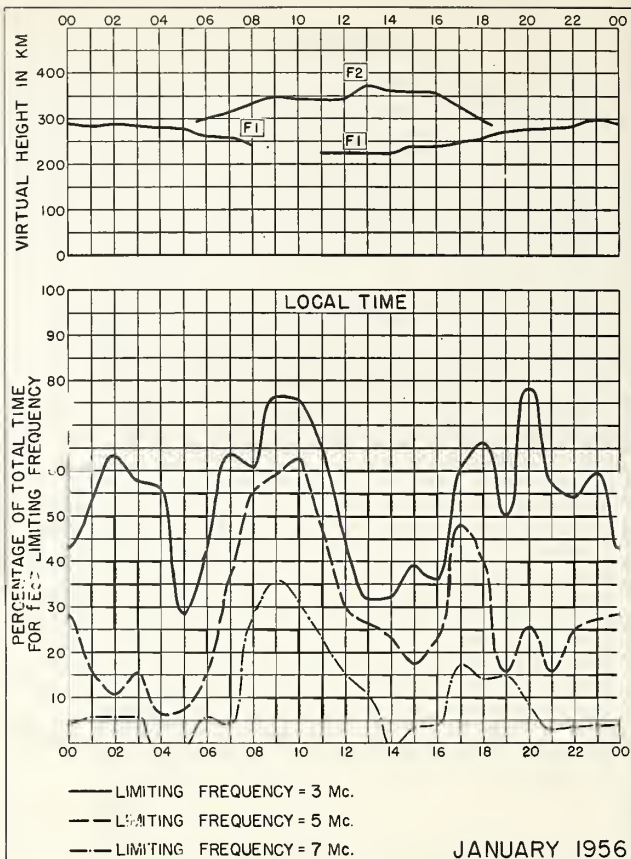


Fig. 50. CHRISTCHURCH, NEW ZEALAND

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

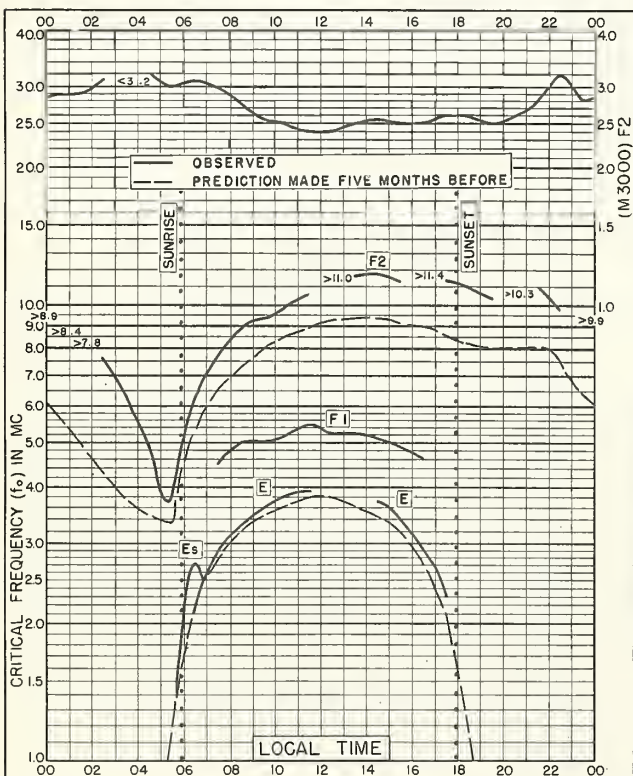


Fig. 51. NAIROBI, KENYA
1.3°S, 36.8°E DECEMBER 1955

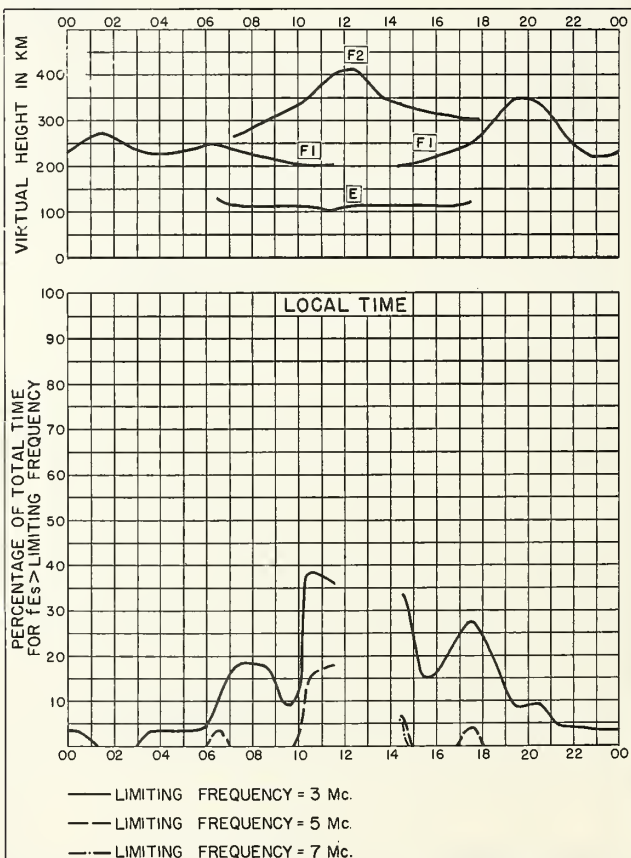


Fig. 52. NAIROBI, KENYA

DECEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

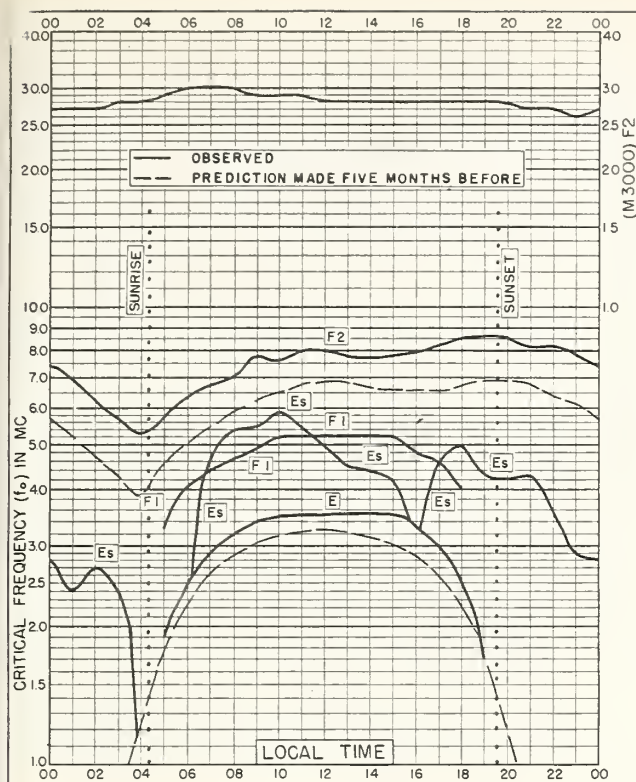


Fig. 53. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E DECEMBER 1955

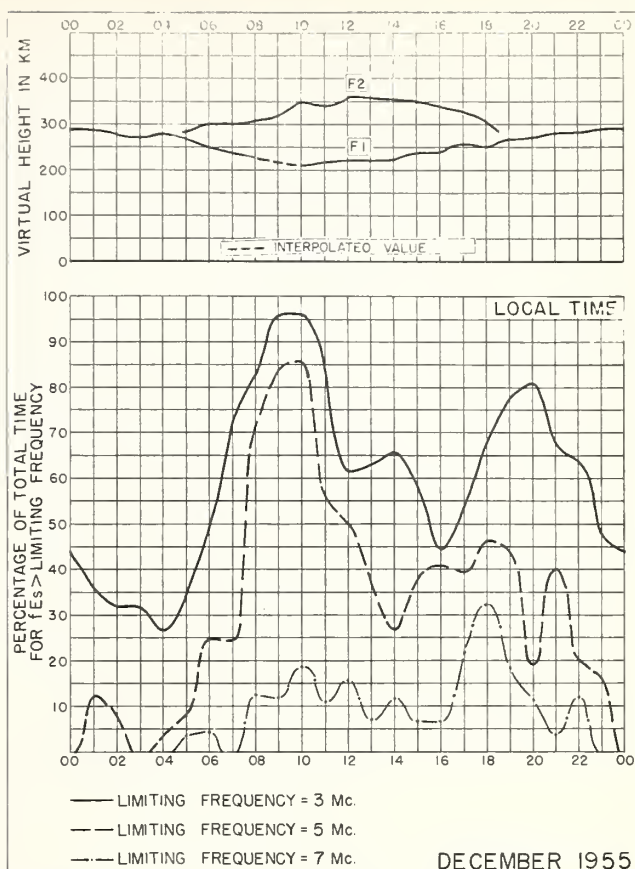


Fig. 54. CHRISTCHURCH, NEW ZEALAND DECEMBER 1955

NBS 490

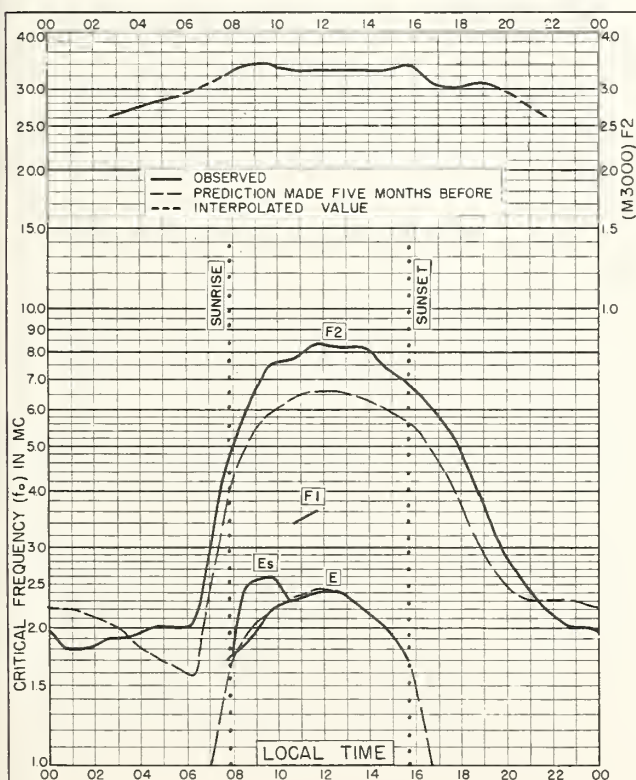


Fig. 55. INVERNESS, SCOTLAND
57.4°N, 4.2°W NOVEMBER 1955

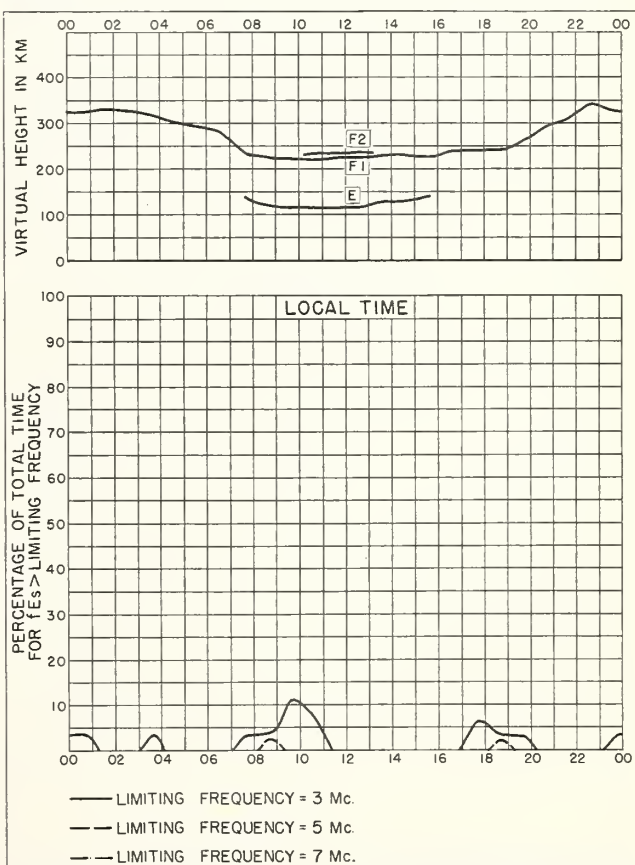


Fig. 56. INVERNESS, SCOTLAND NOVEMBER 1955

NBS 490

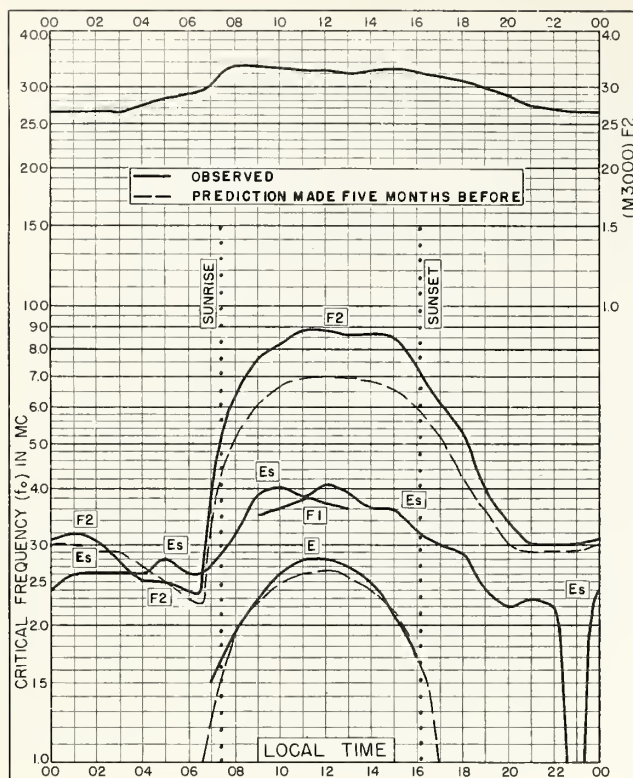


Fig. 57. SLOUGH, ENGLAND
51.5°N, 0.6°W

NOVEMBER 1955

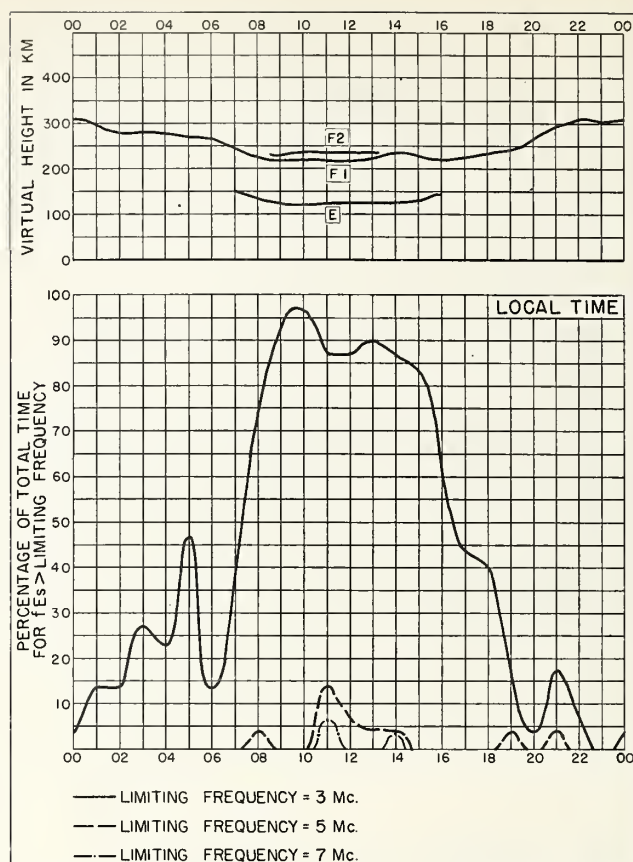


Fig. 58. SLOUGH, ENGLAND

NOVEMBER 1955

NBS 490

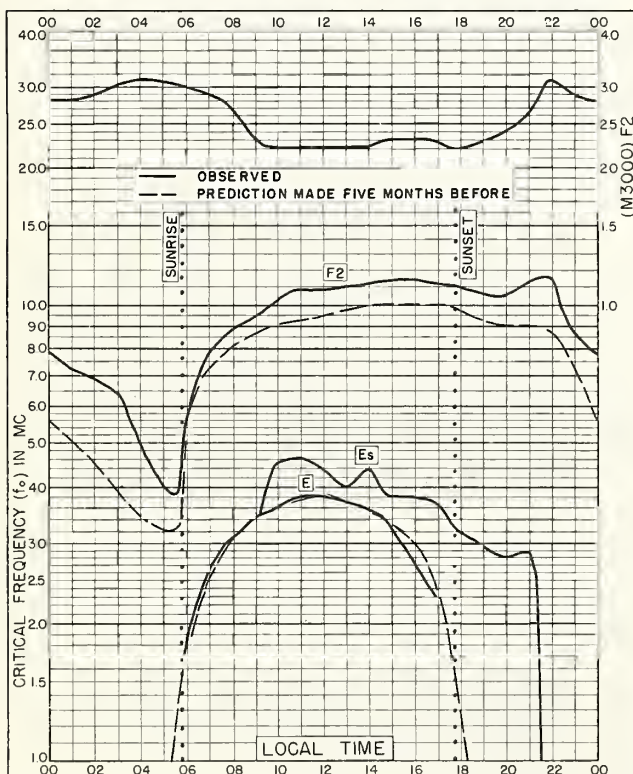


Fig. 59. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E

NOVEMBER 1955

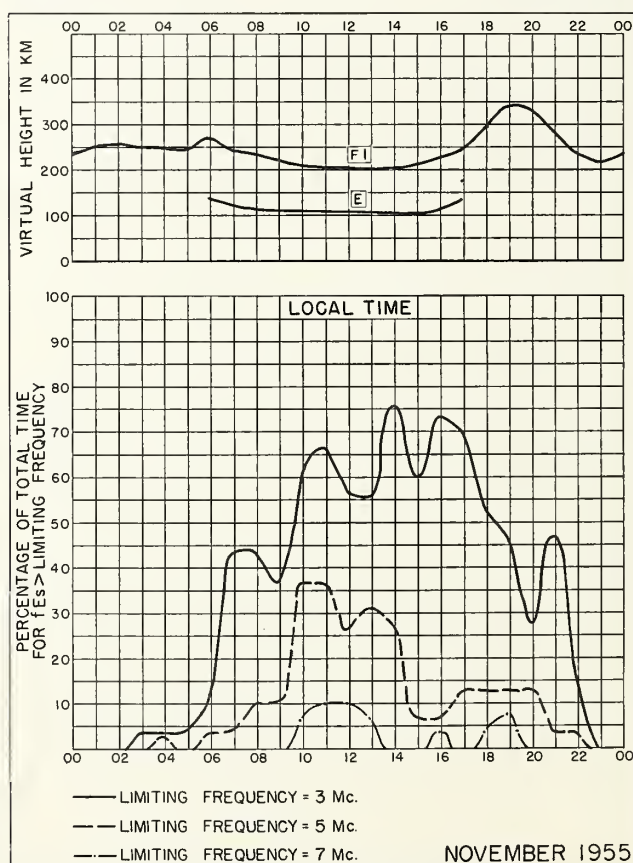


Fig. 60. SINGAPORE, BRITISH MALAYA

NOVEMBER 1955

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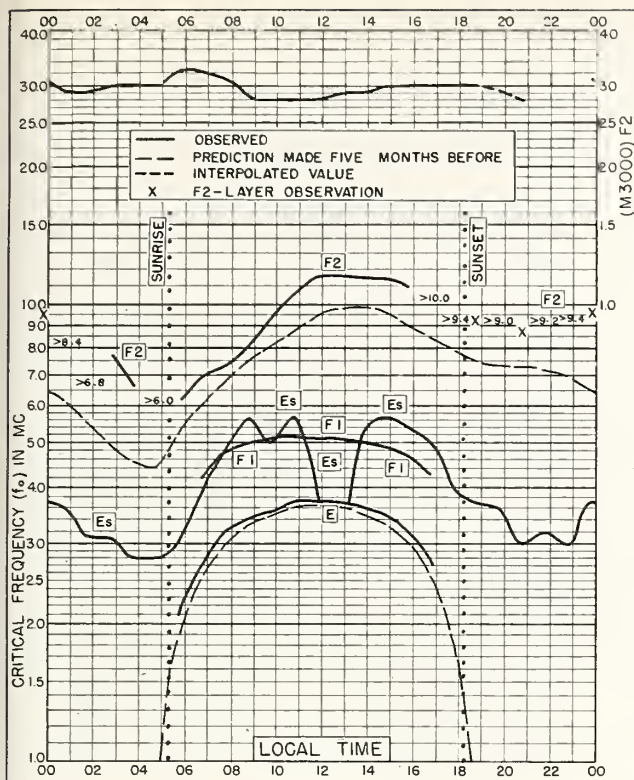


Fig. 61. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E NOVEMBER 1955

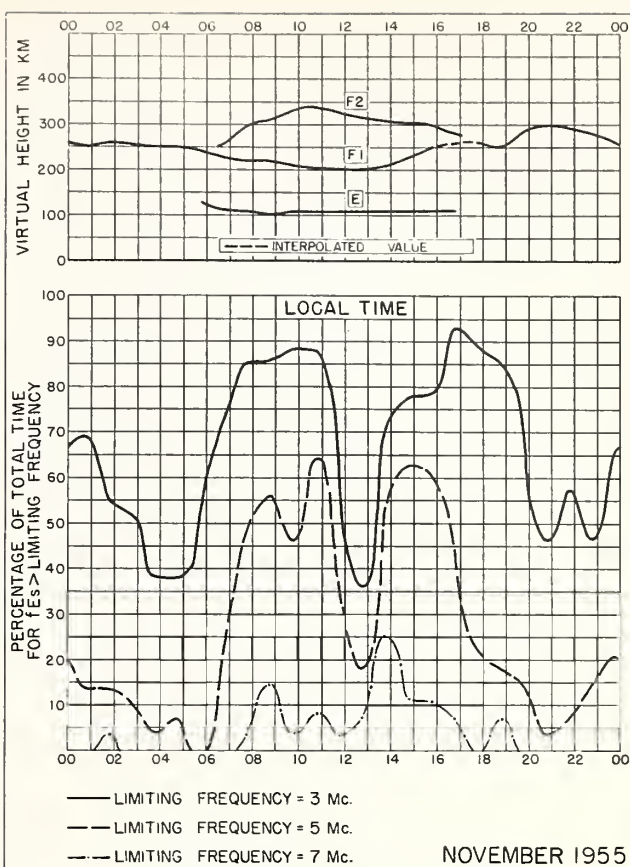


Fig. 62. TOWNSVILLE, AUSTRALIA

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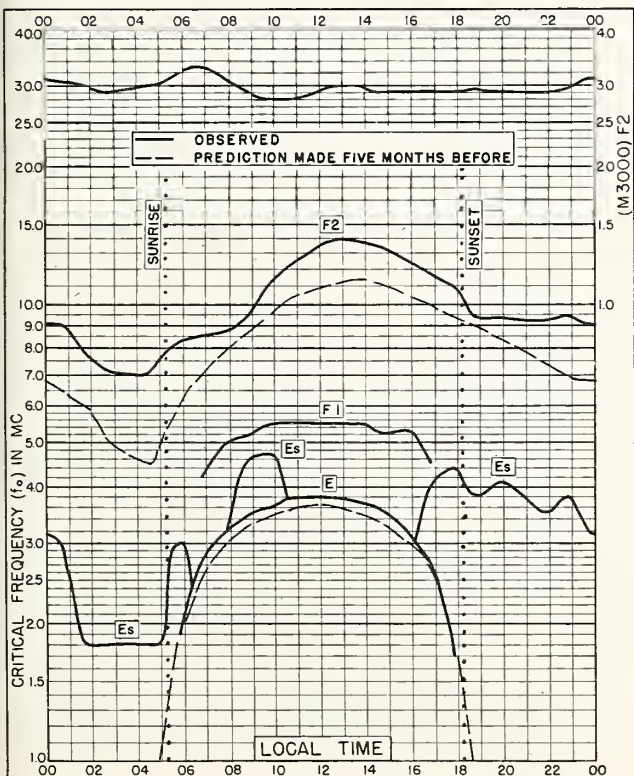


Fig. 63. RAROTONGA I.
21.3°S, 159.8°W NOVEMBER 1955

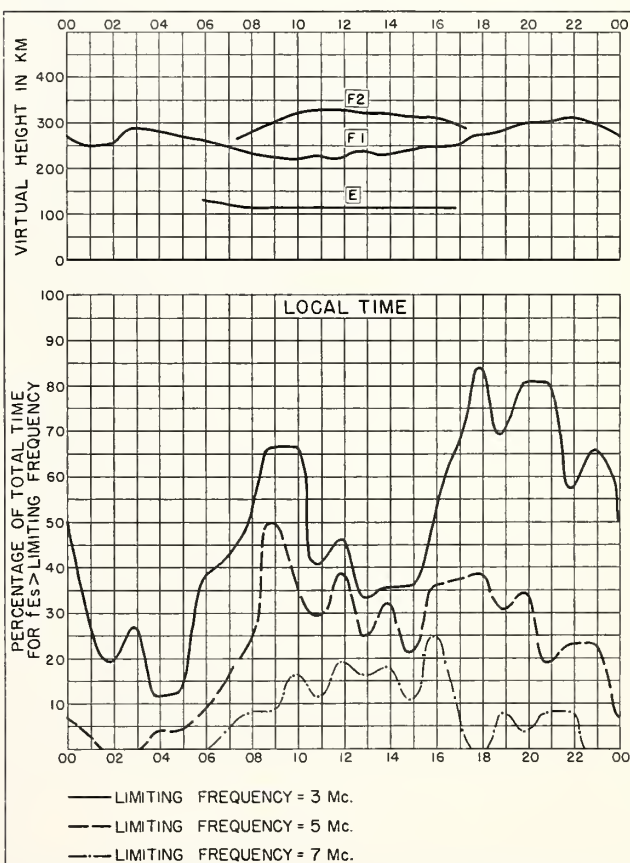


Fig. 64. RAROTONGA I.

NOVEMBER 1955

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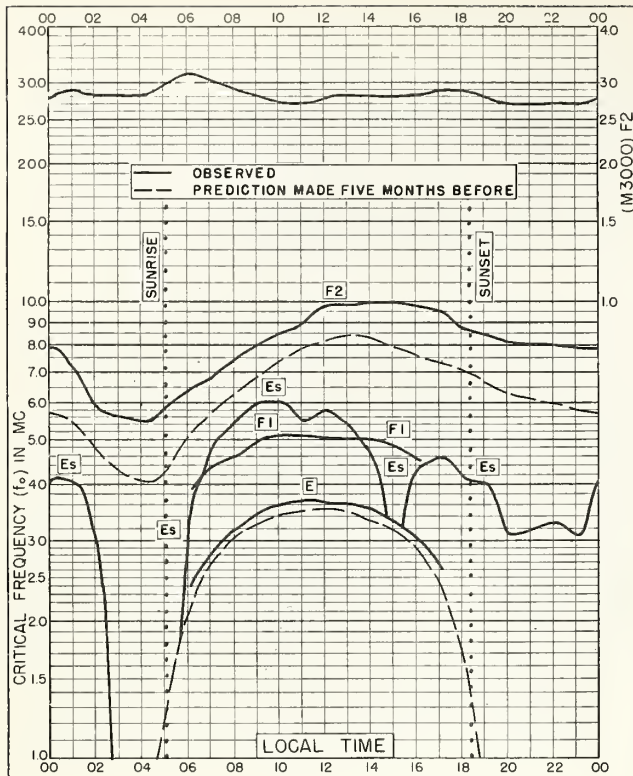


Fig. 65. BRISBANE, AUSTRALIA
27.5°S, 153.0°E NOVEMBER 1955

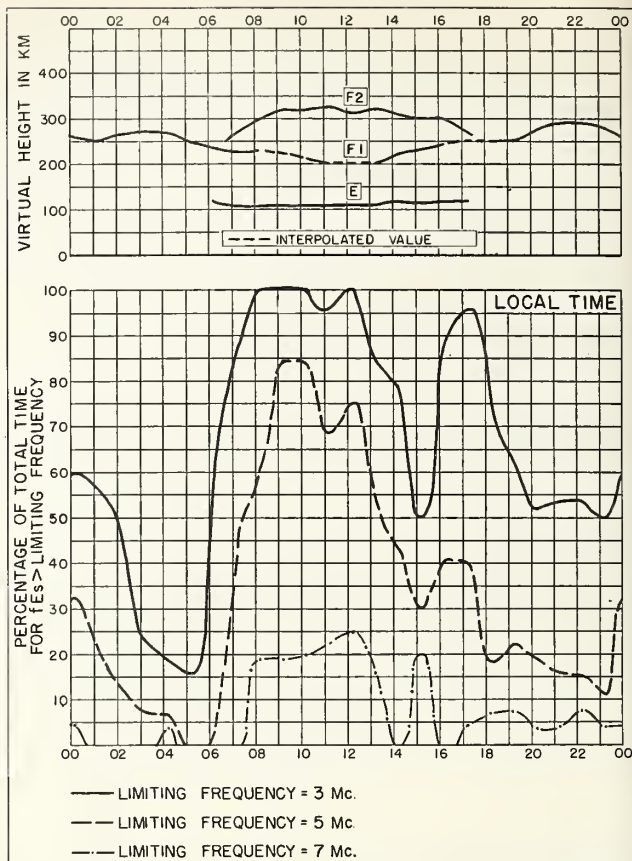


Fig. 66. BRISBANE, AUSTRALIA NOVEMBER 1955

NBS 490

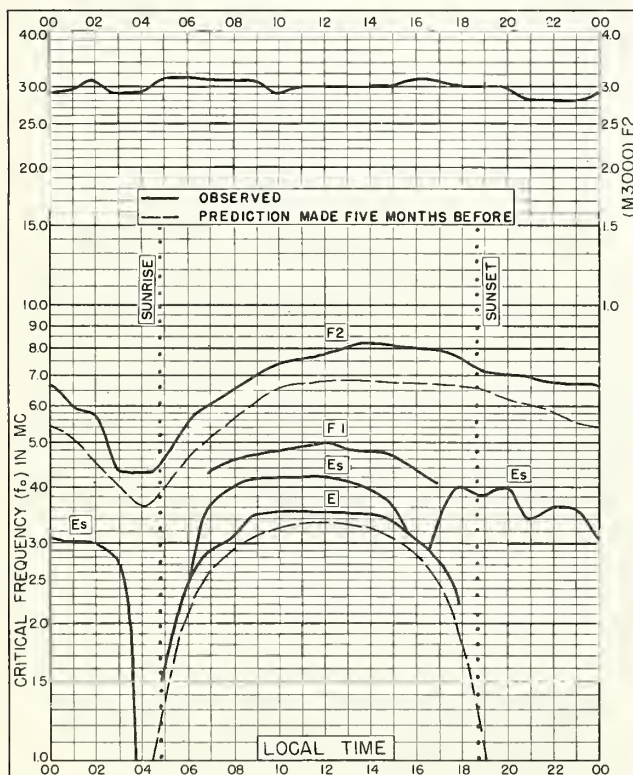


Fig. 67. CANBERRA, AUSTRALIA
35.3°S, 149.0°E NOVEMBER 1955

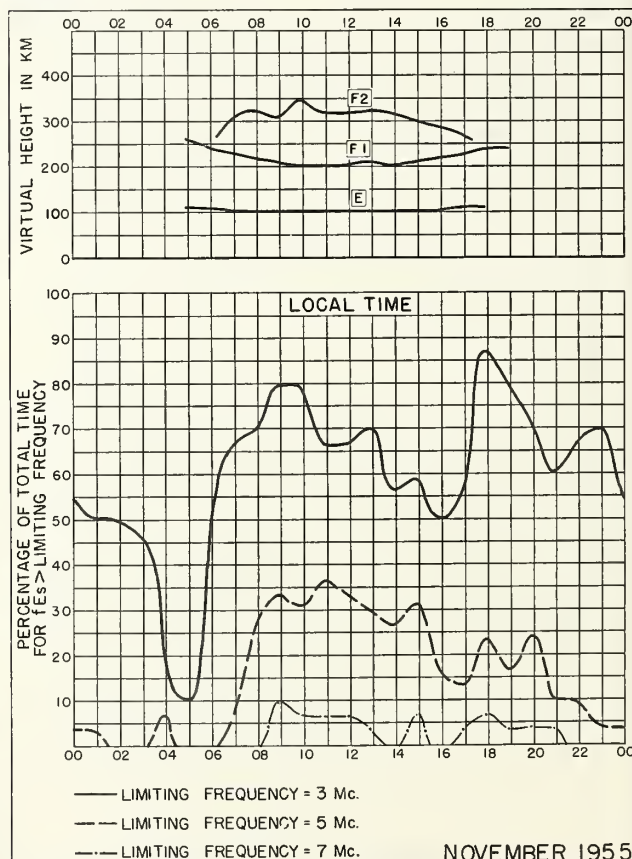


Fig. 68. CANBERRA, AUSTRALIA

NOVEMBER 1955

NBS 490

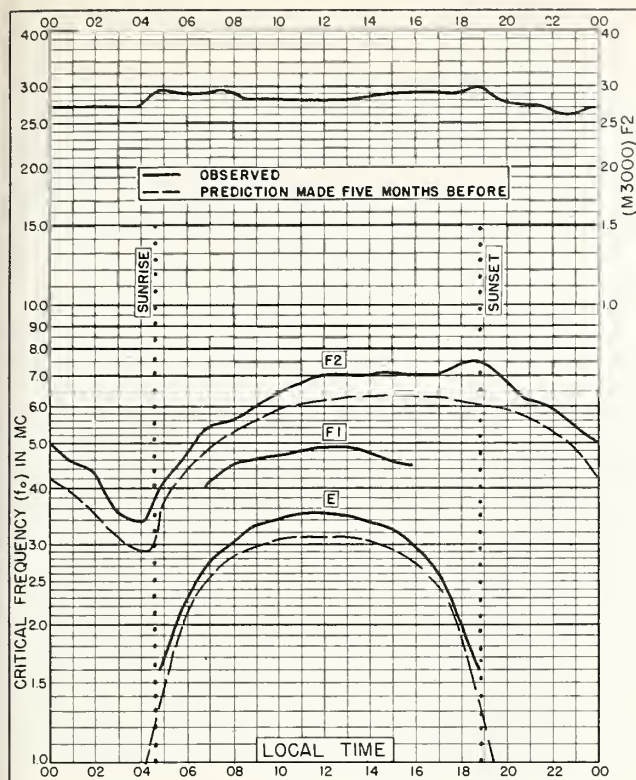


Fig. 69. HOBART, TASMANIA
42.9°S, 147.3°E NOVEMBER 1955

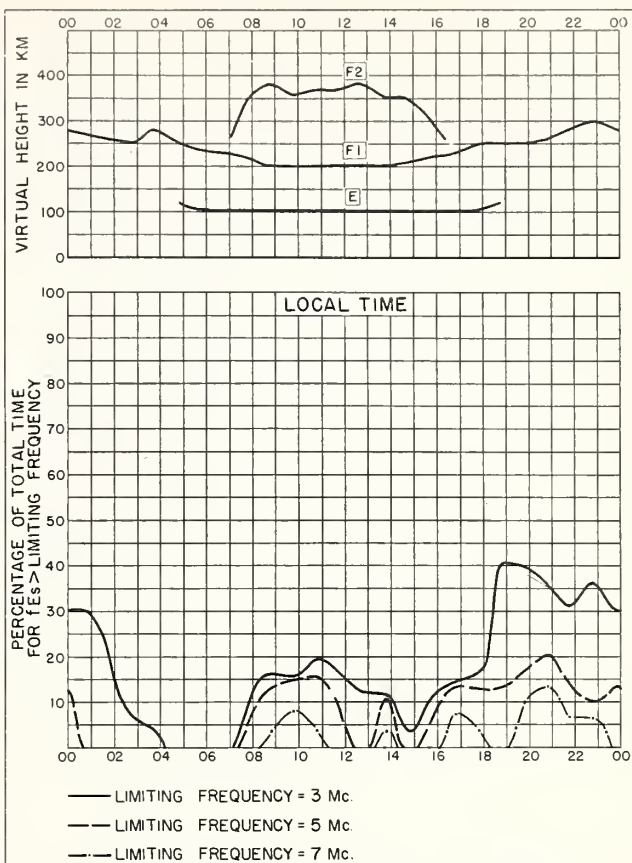


Fig. 70. HOBART, TASMANIA NOVEMBER 1955

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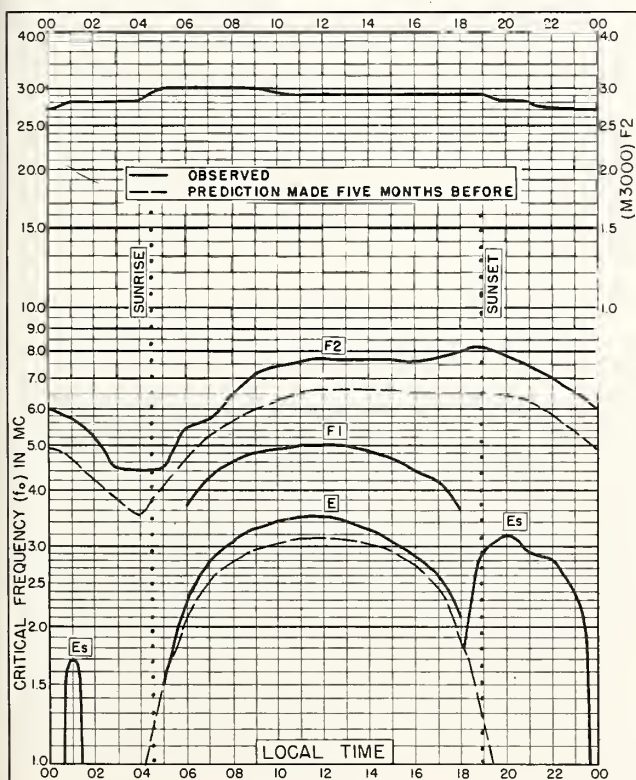


Fig. 71. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E NOVEMBER 1955

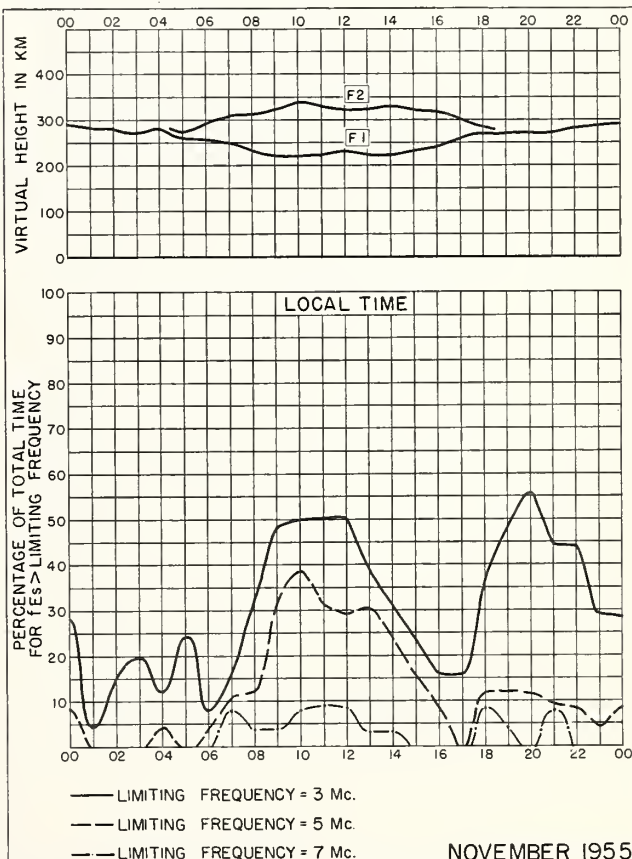


Fig. 72. CHRISTCHURCH, NEW ZEALAND

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U.S. GOVERNMENT PRINTING OFFICE: 1957

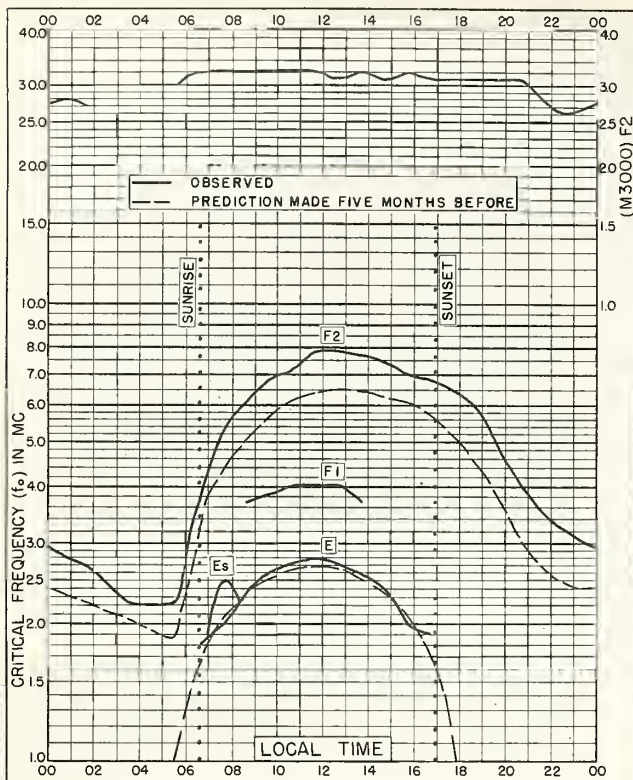


Fig. 73. INVERNESS, SCOTLAND

57.4°N, 4.2°W

OCTOBER 1955

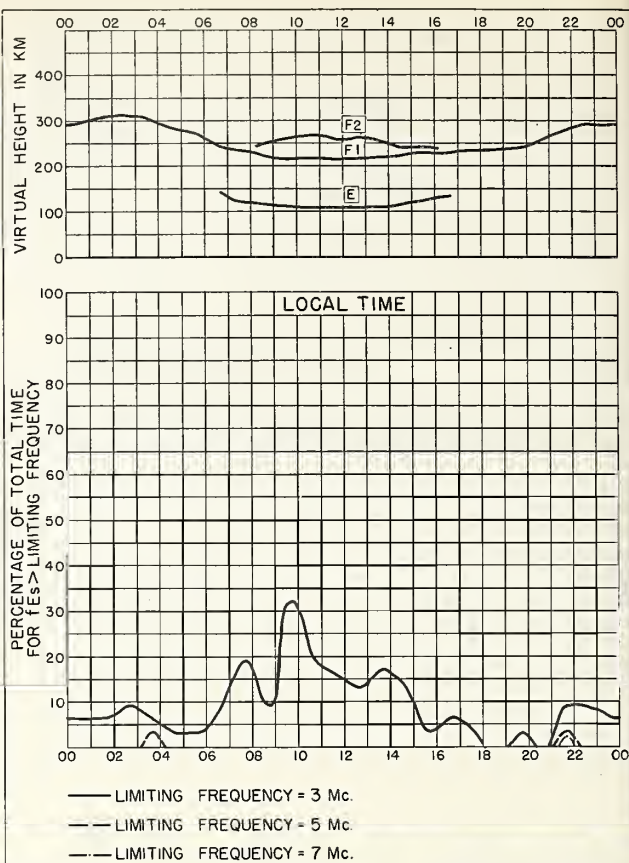


Fig. 74. INVERNESS, SCOTLAND OCTOBER 1955

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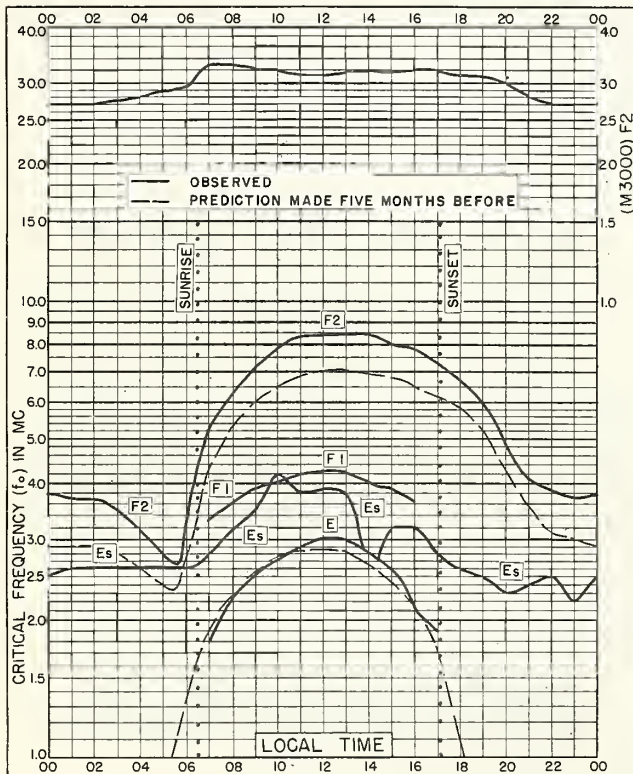


Fig. 75. SLOUGH, ENGLAND

51.5°N, 0.6°W

OCTOBER 1955

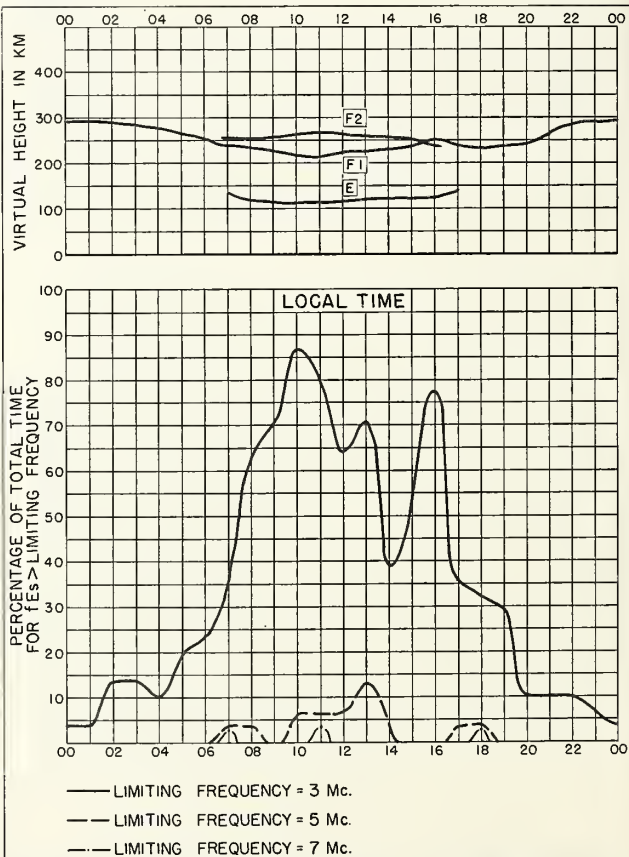


Fig. 76. SLOUGH, ENGLAND

OCTOBER 1955

NBS 490

U. S. AIR FORCE RESEARCH OFFICE

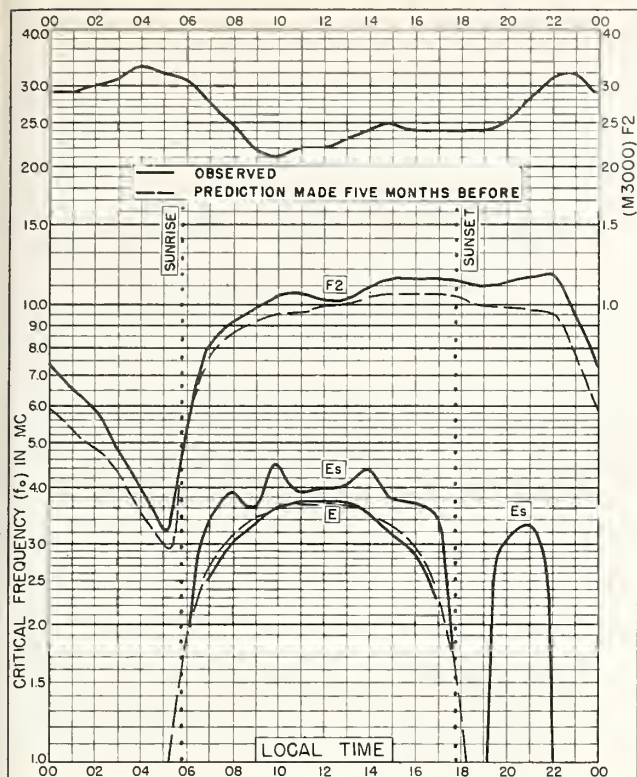


Fig. 77. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E
OCTOBER 1955

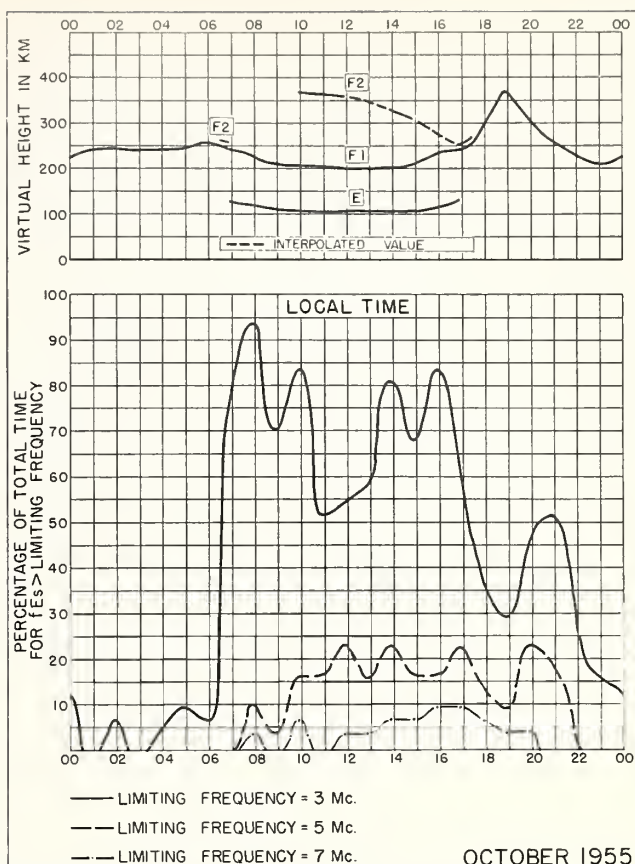


Fig. 78. SINGAPORE, BRITISH MALAYA
OCTOBER 1955

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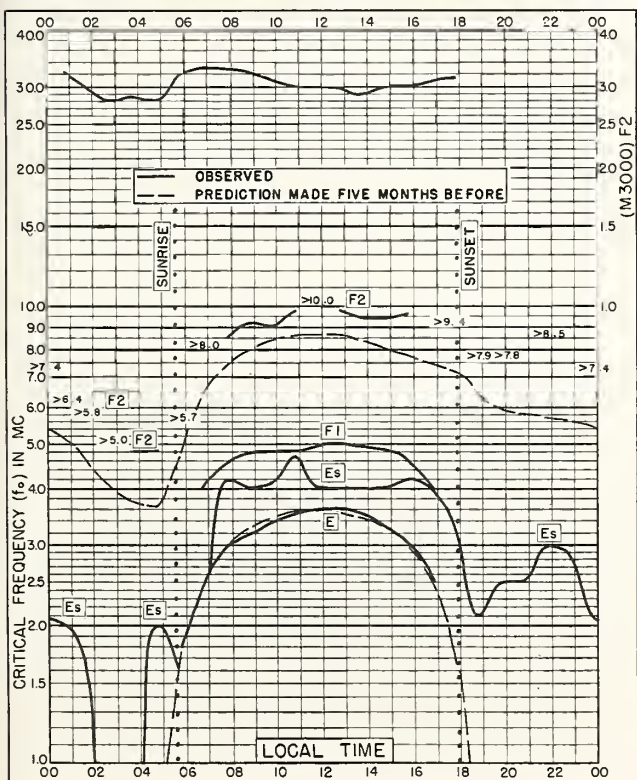


Fig. 79. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E
OCTOBER 1955

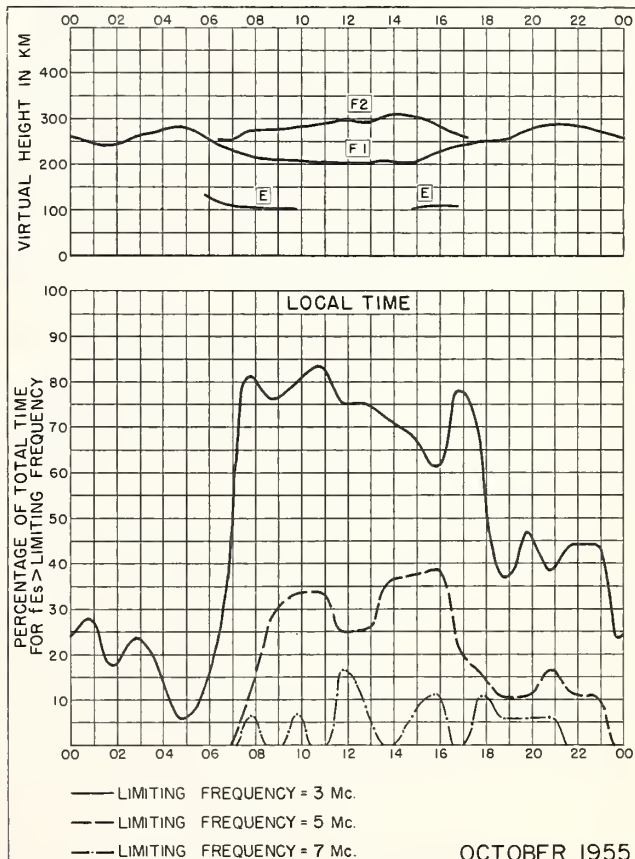


Fig. 80. TOWNSVILLE, AUSTRALIA
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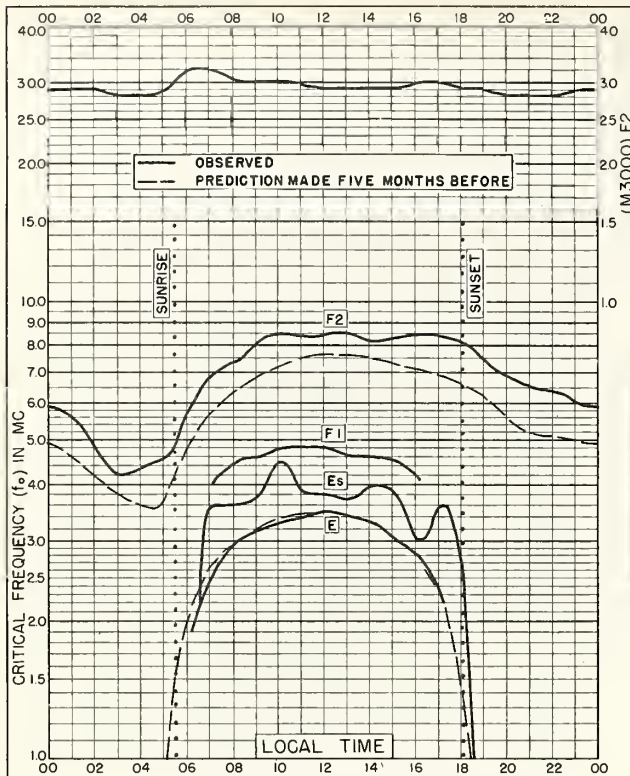


Fig. 81. BRISBANE, AUSTRALIA
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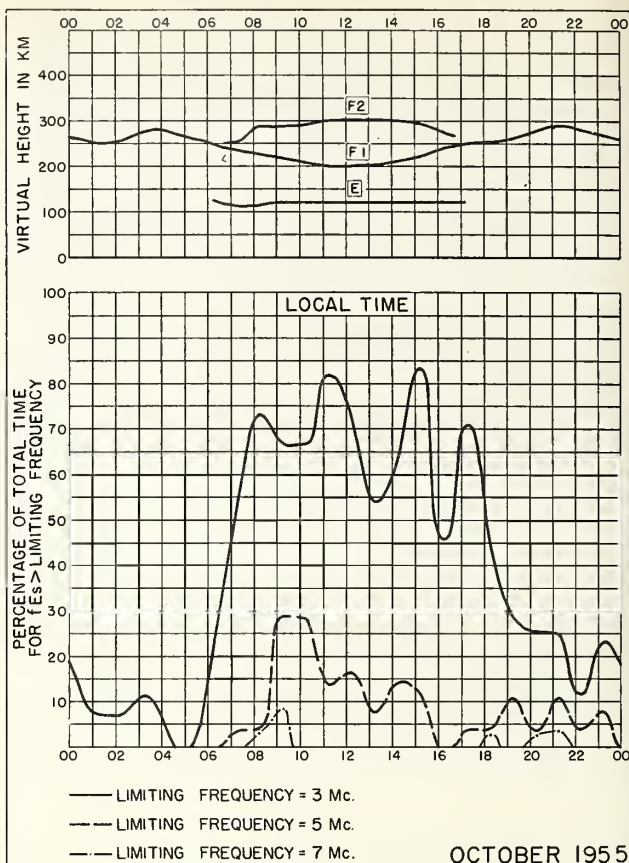


Fig. 82. BRISBANE, AUSTRALIA

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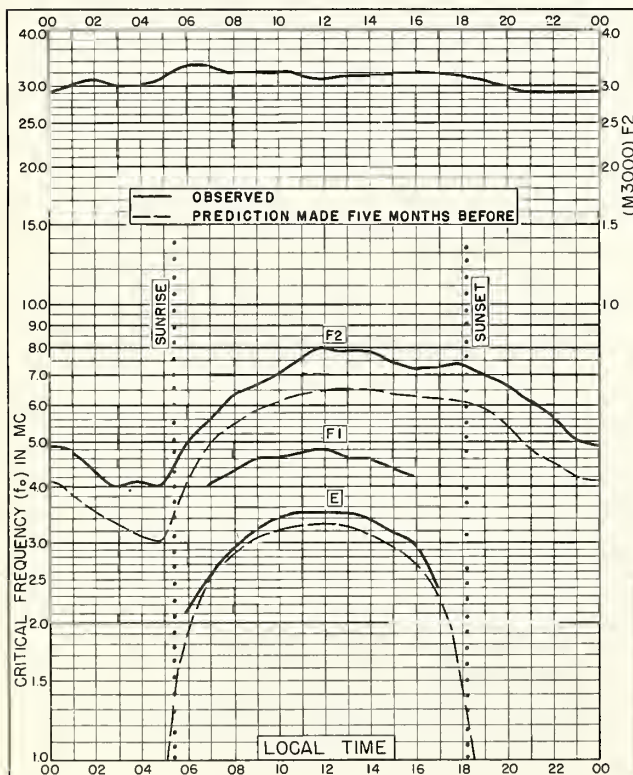


Fig. 83. CANBERRA, AUSTRALIA
35.3°S, 149.0°E OCTOBER 1955

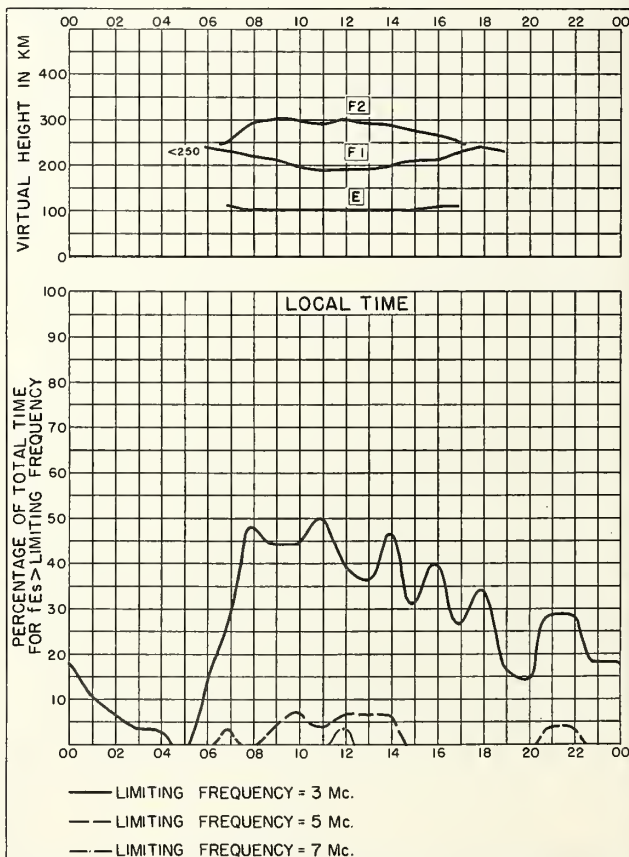


Fig. 84. CANBERRA, AUSTRALIA OCTOBER 1955

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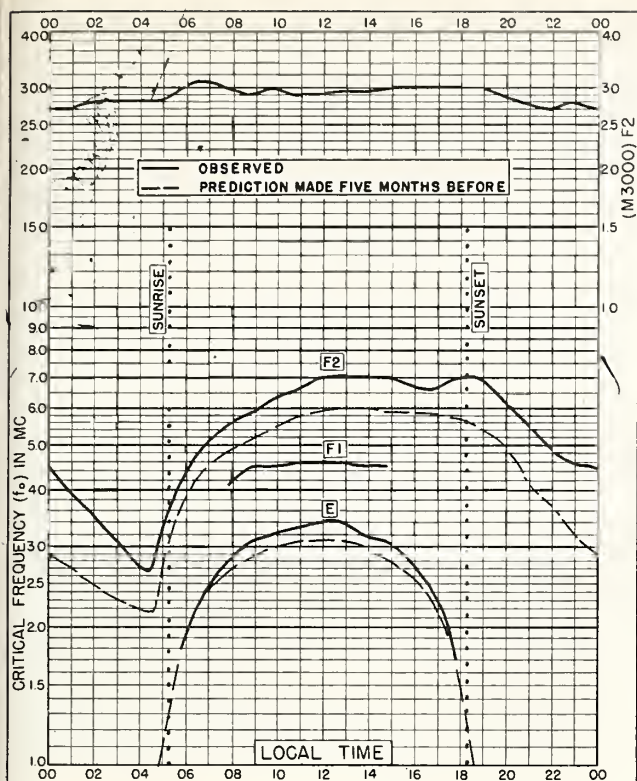


Fig. 85. HOBART, TASMANIA
42.9°S, 147.3°E

OCTOBER 1955

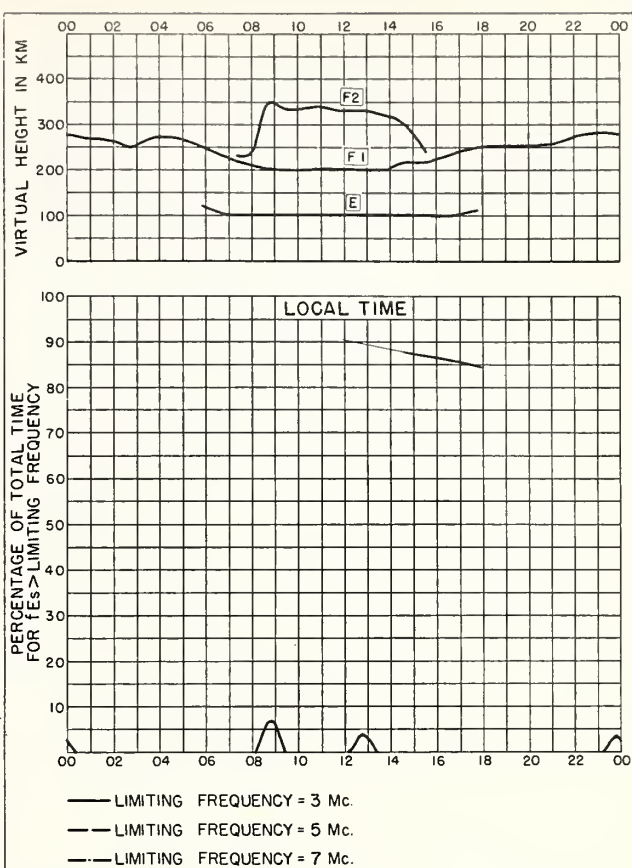


Fig. 86. HOBART, TASMANIA

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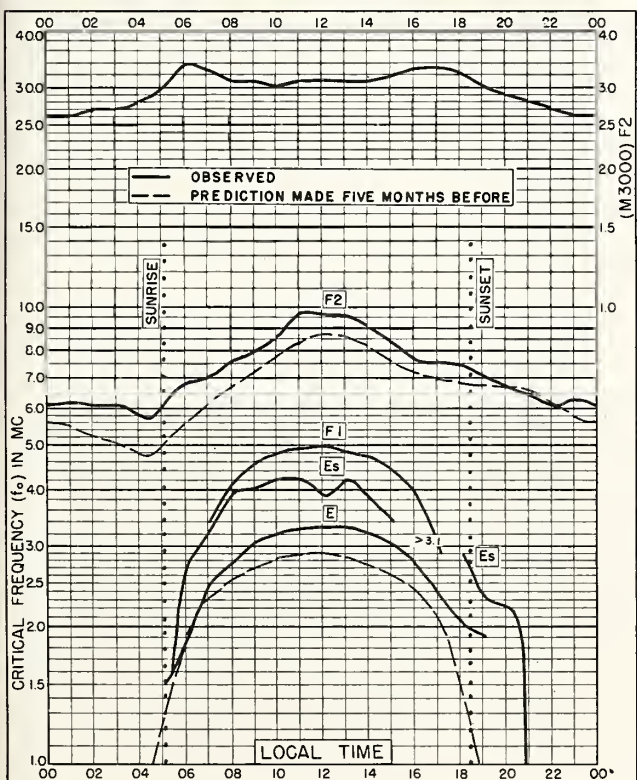


Fig. 87. FALKLAND, IS.
51.7°S, 57.8°W

OCTOBER 1955

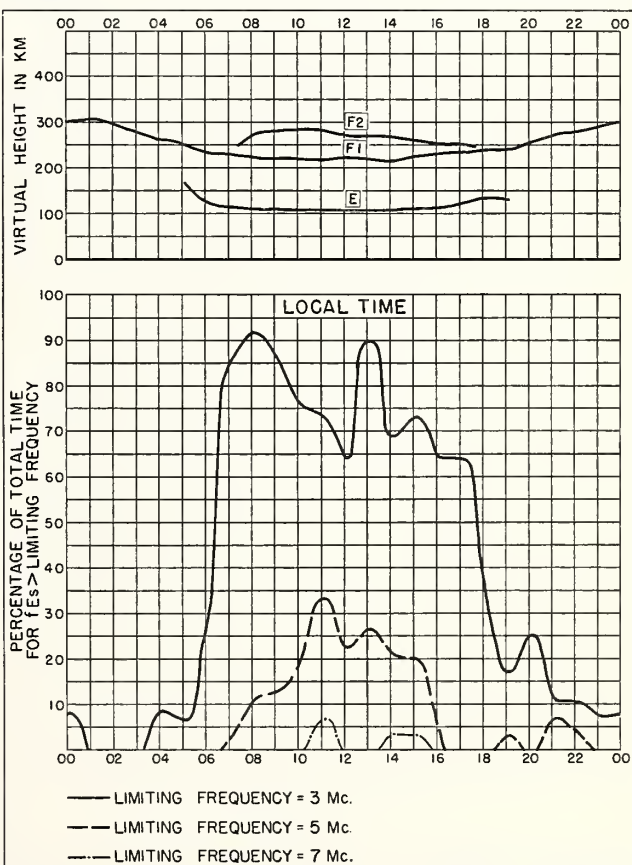


Fig. 88. FALKLAND IS.

OCTOBER 1955

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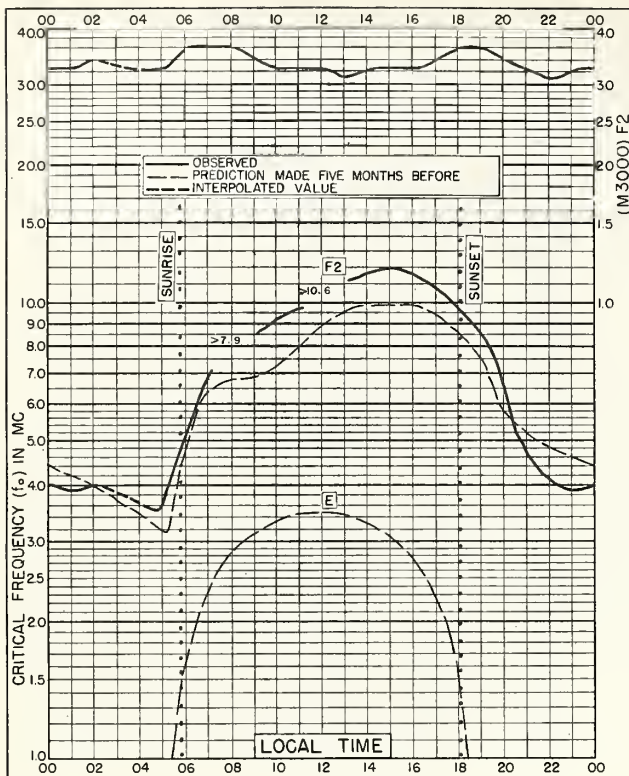


Fig. 89. DELHI, INDIA
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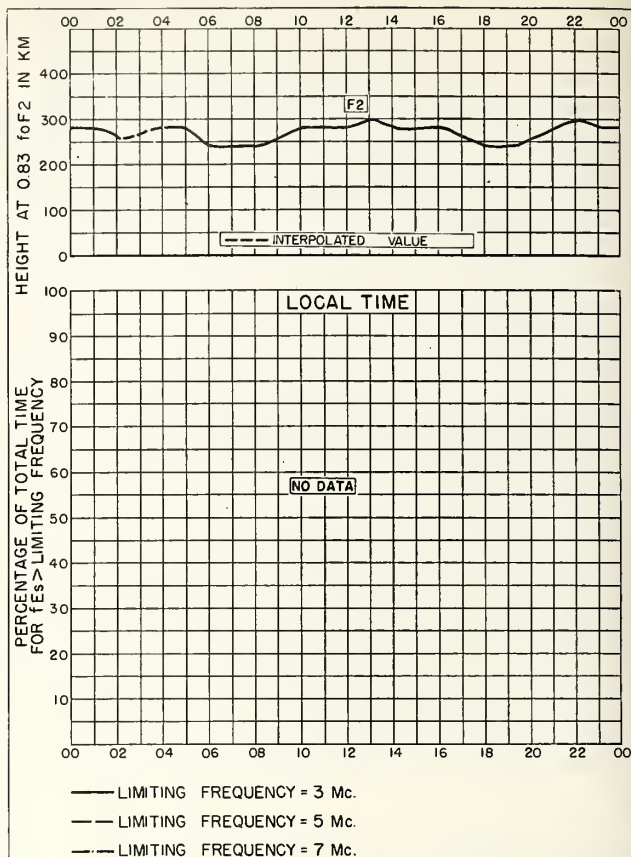


Fig. 90. DELHI, INDIA SEPTEMBER 1955

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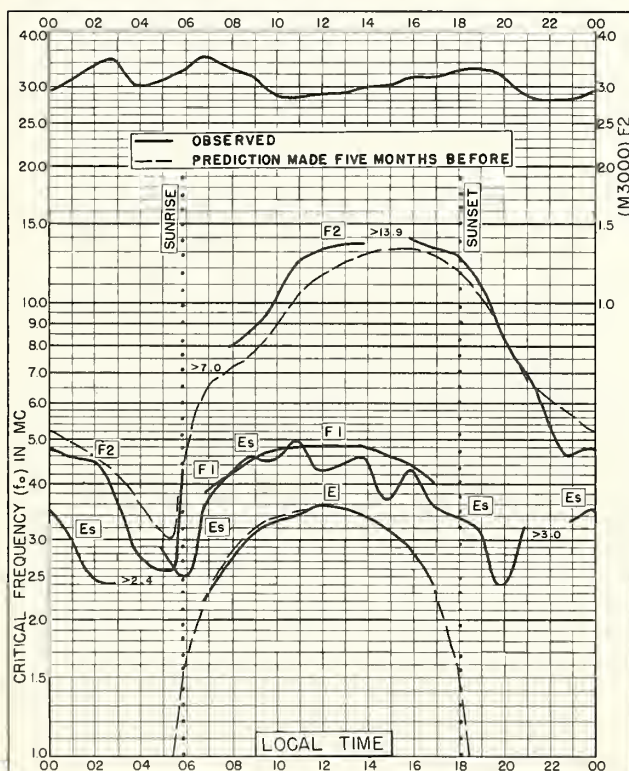


Fig. 91. AHMEDABAD, INDIA
23.0°N, 72.6°E SEPTEMBER 1955

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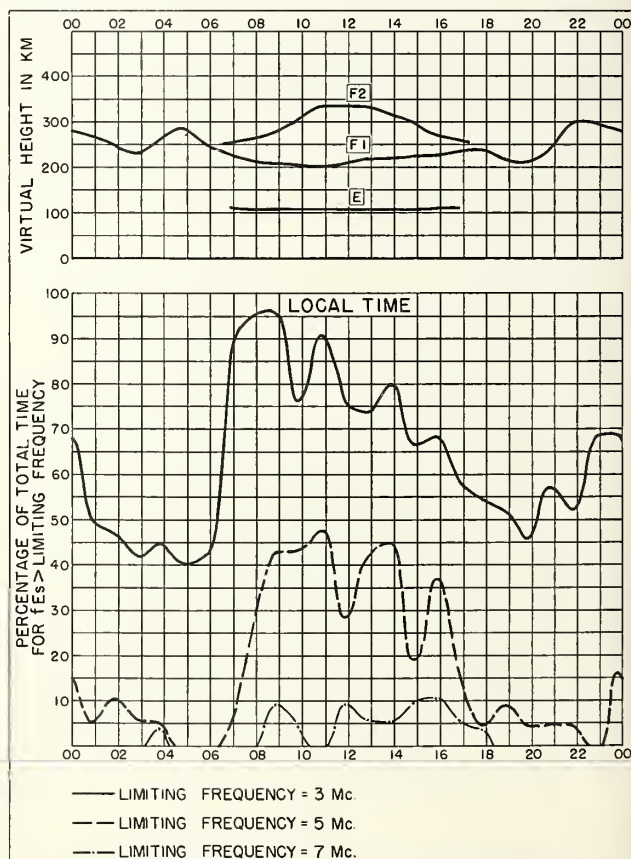


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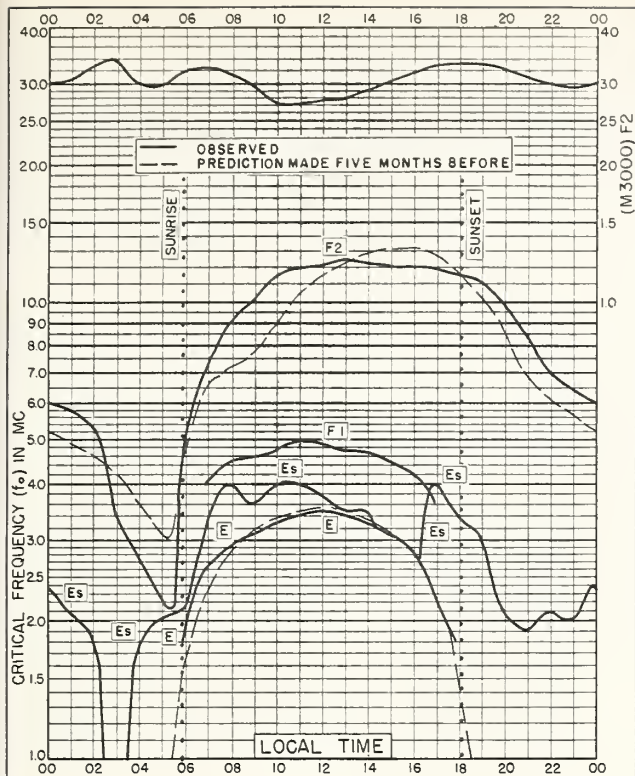


Fig. 93. CALCUTTA, INDIA
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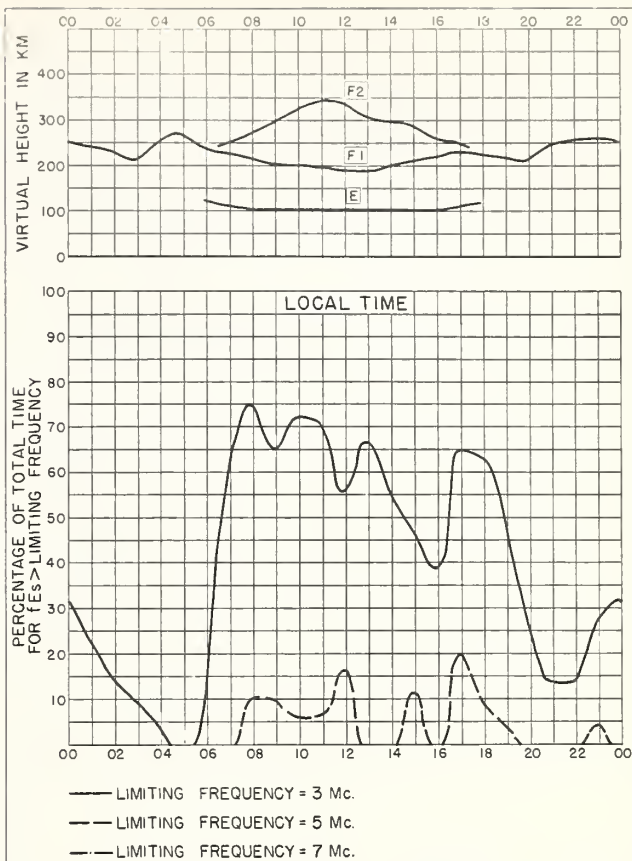


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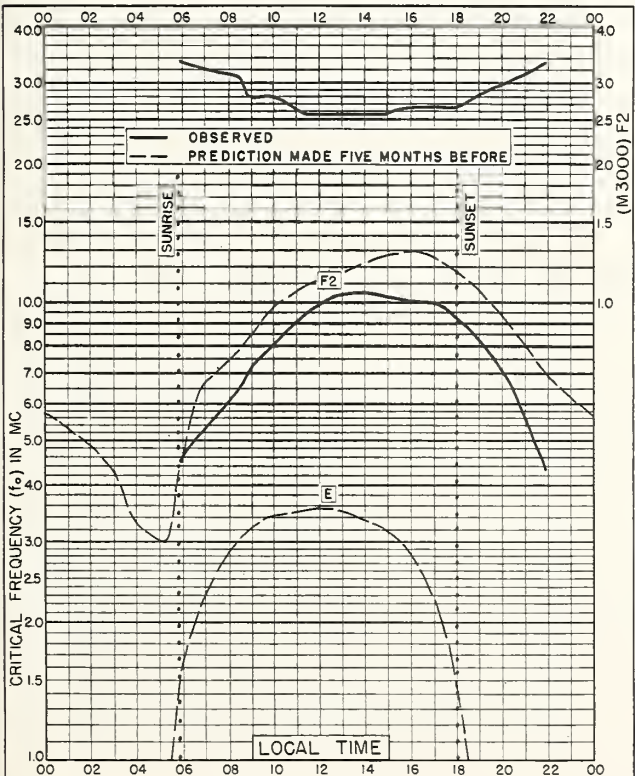


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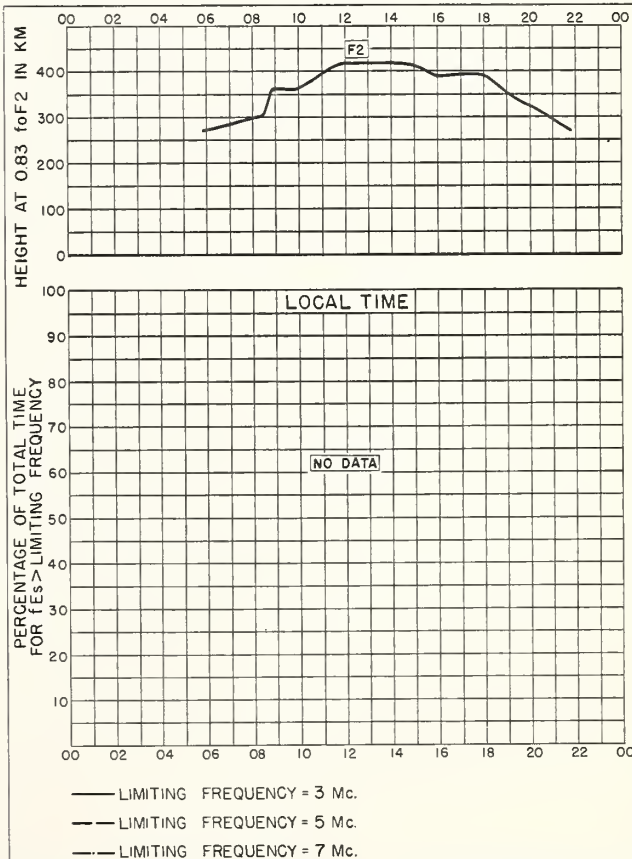


Fig. 96. BOMBAY, INDIA SEPTEMBER 1955

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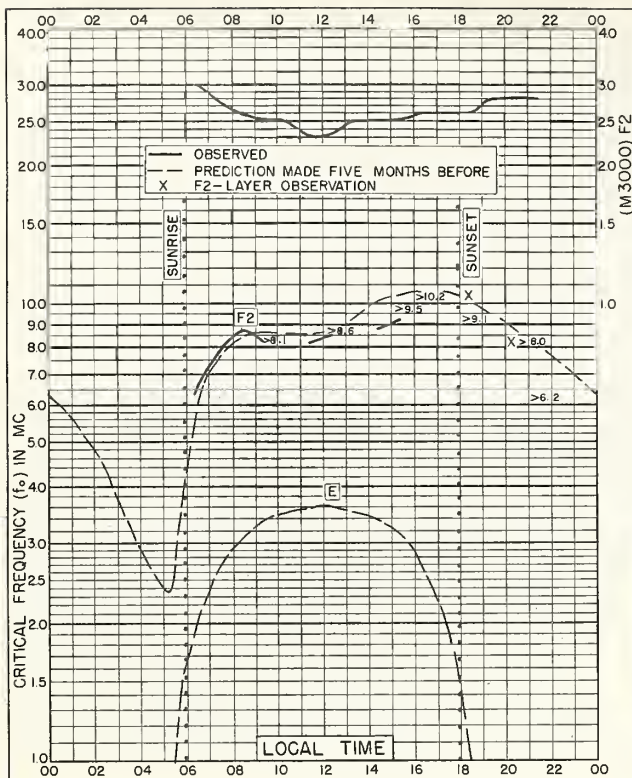


Fig. 97. MADRAS, INDIA
13.0°N, 80.2°E
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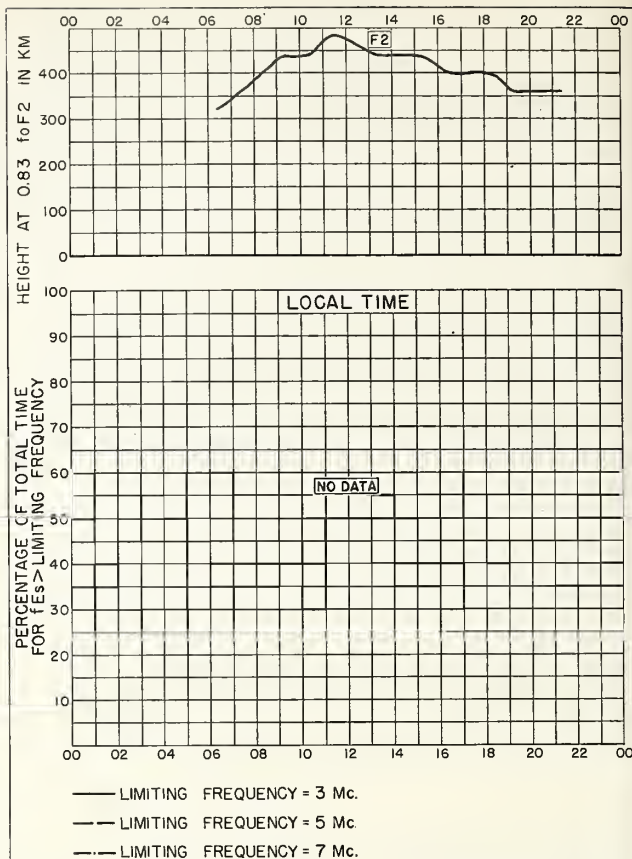


Fig. 98. MADRAS, INDIA
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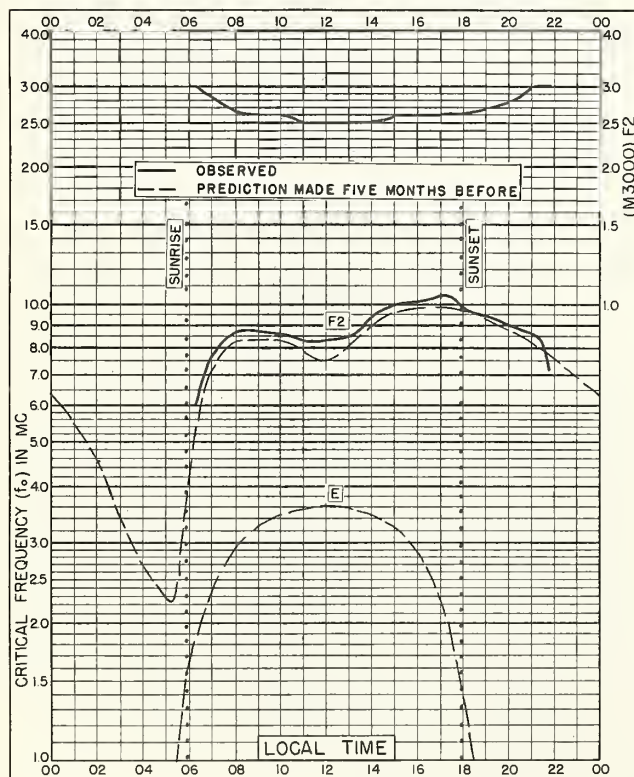


Fig. 99. TIRUCHY, INDIA
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SEPTEMBER 1955

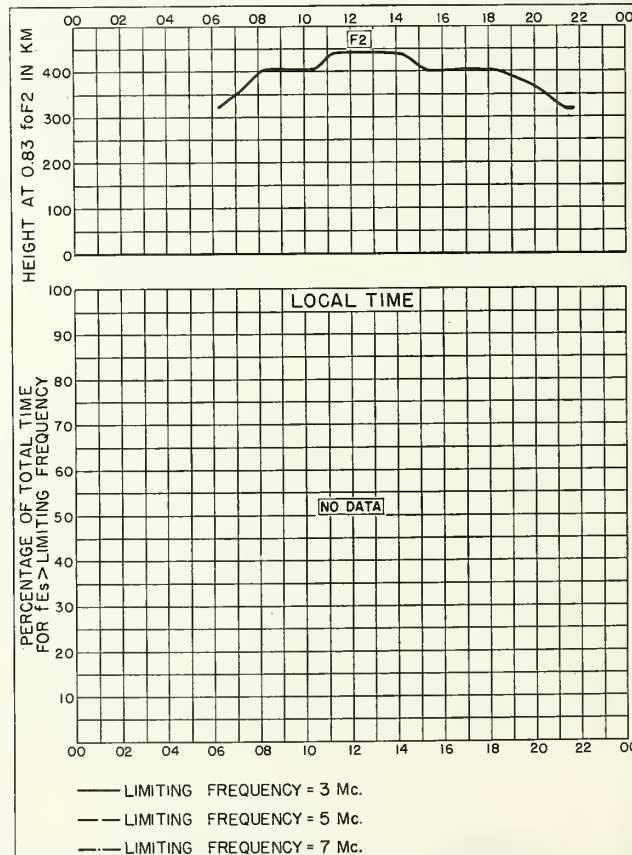


Fig. 100. TIRUCHY, INDIA
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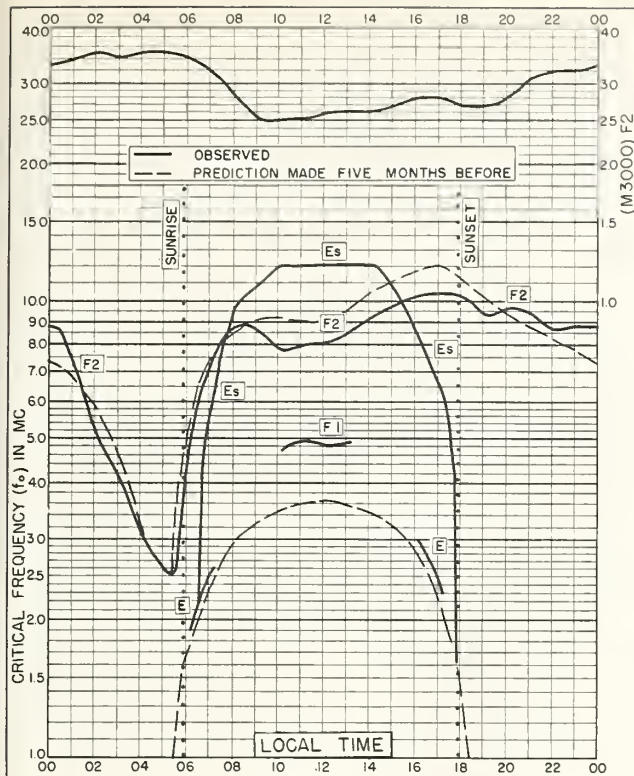


Fig. 101. KODAIKANAL, INDIA

10.2°N, 77.5°E

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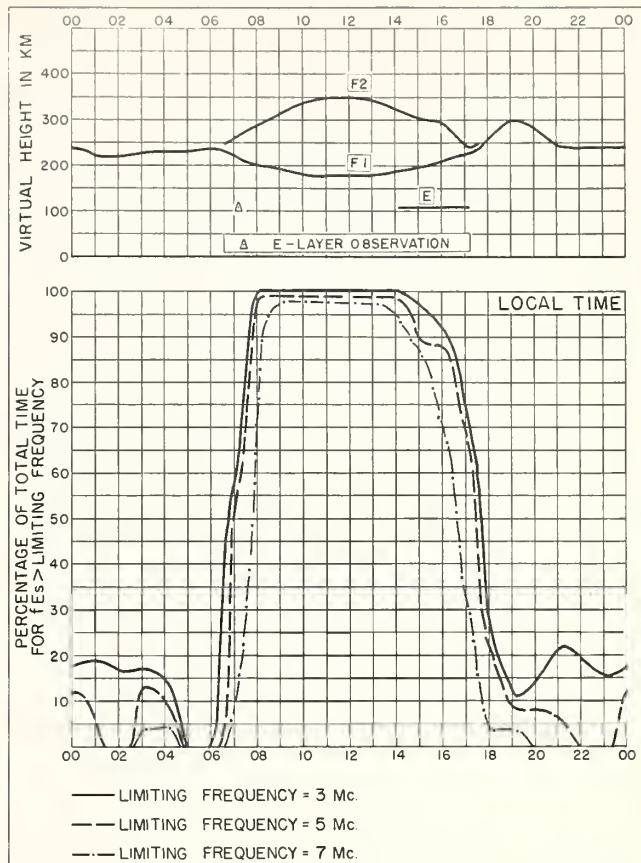


Fig. 102. KODAIKANAL, INDIA

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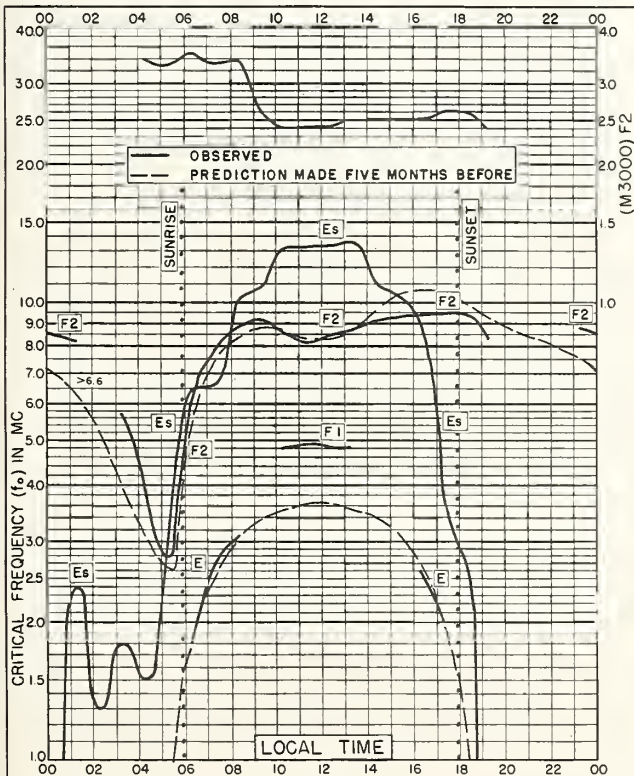


Fig. 103. IBADAN, NIGERIA

7.4°N, 4.0°E

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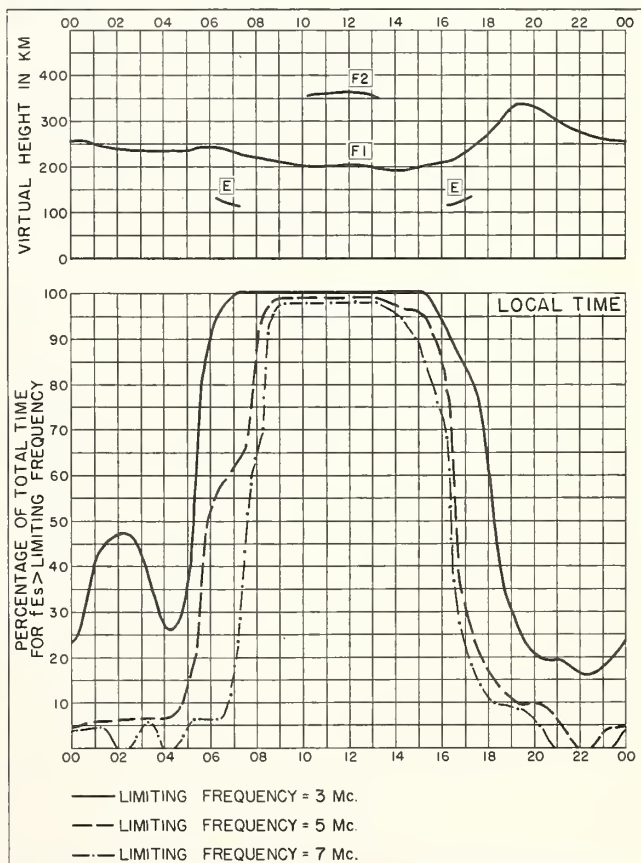


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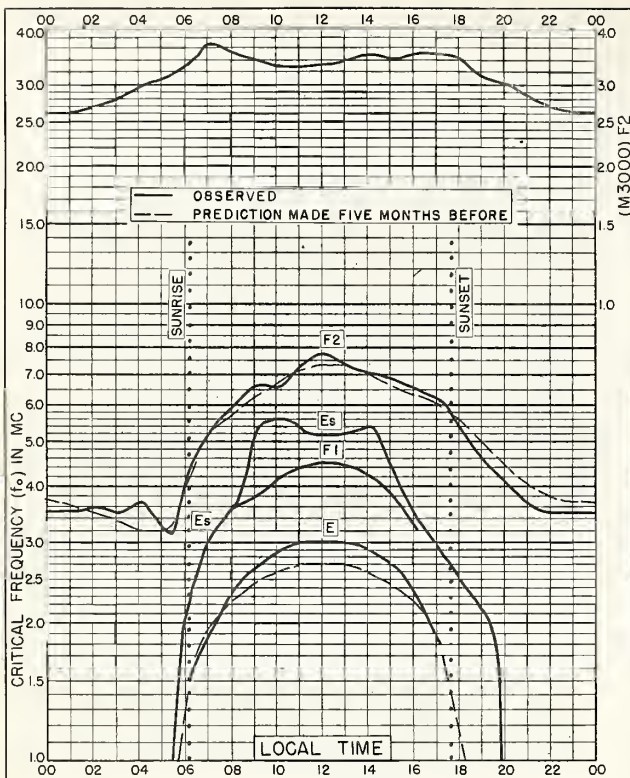


Fig. 105. FALKLAND IS.
51.7°S, 57.8°W SEPTEMBER 1955

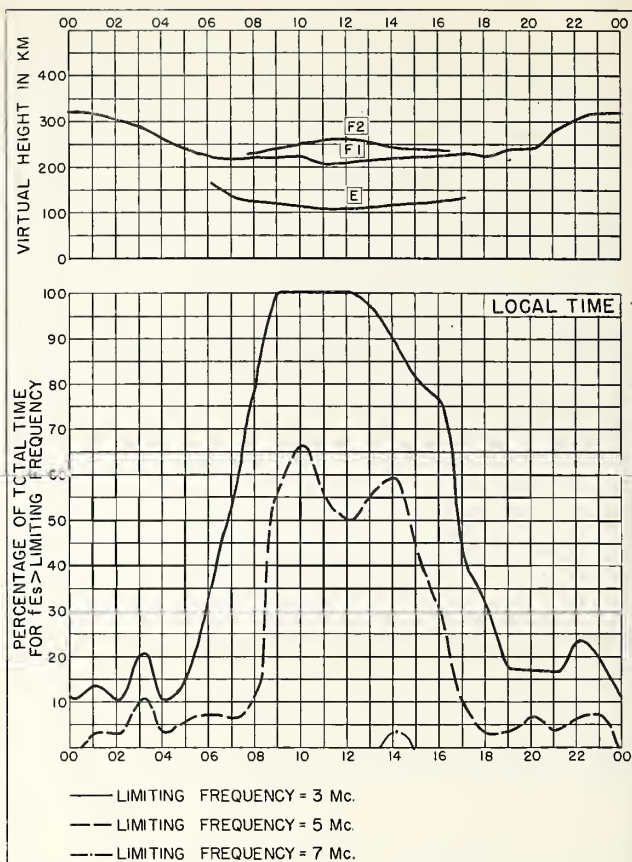


Fig. 106. FALKLAND IS. SEPTEMBER 1955

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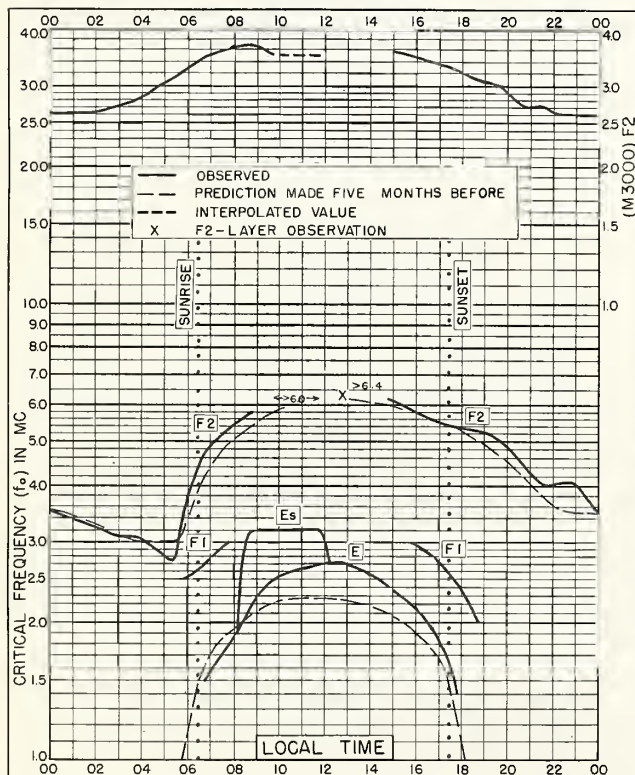


Fig. 107. PORT LOCKROY
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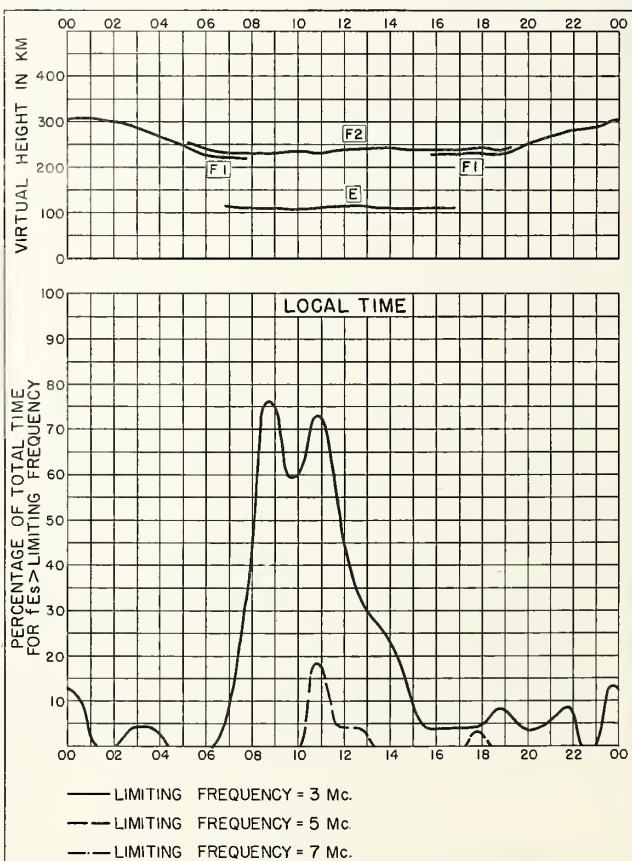


Fig. 108. PORT LOCKROY SEPTEMBER 1955

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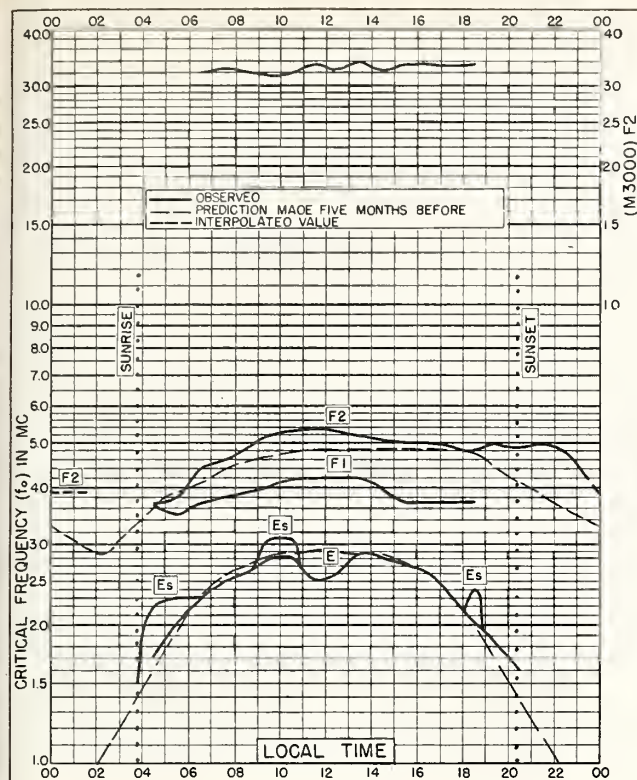


Fig. 109. LULEA, SWEDEN

65.6°N, 22.1°E

AUGUST 1955

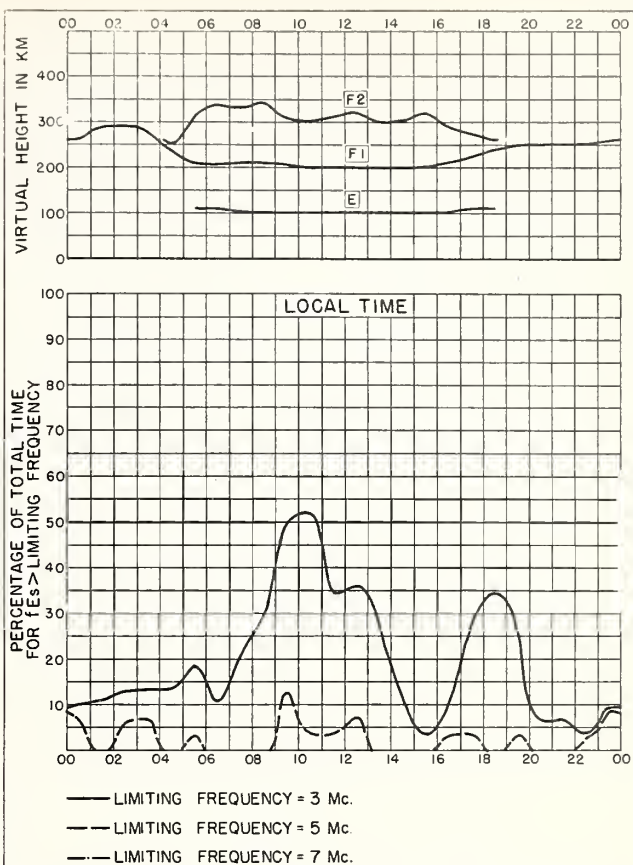


Fig. 110. LULEA, SWEDEN

AUGUST 1955

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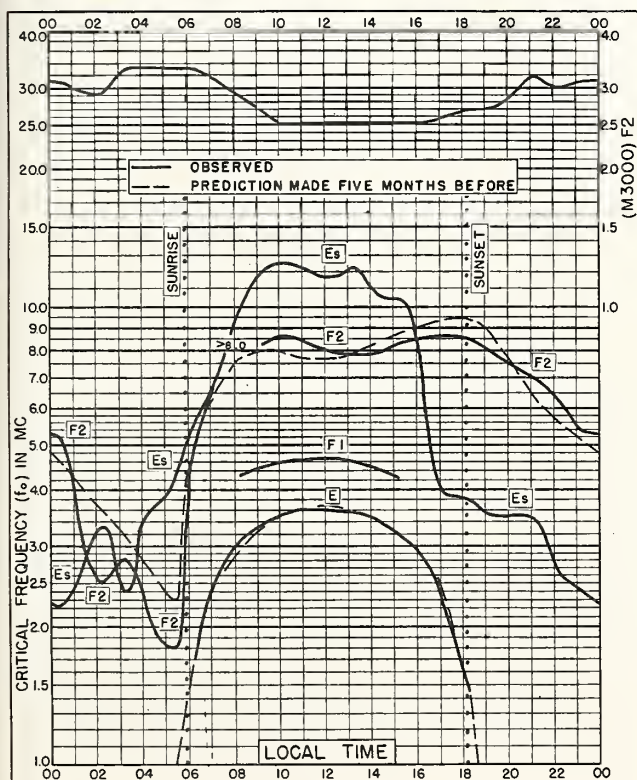


Fig. 111. IBADAN, NIGERIA

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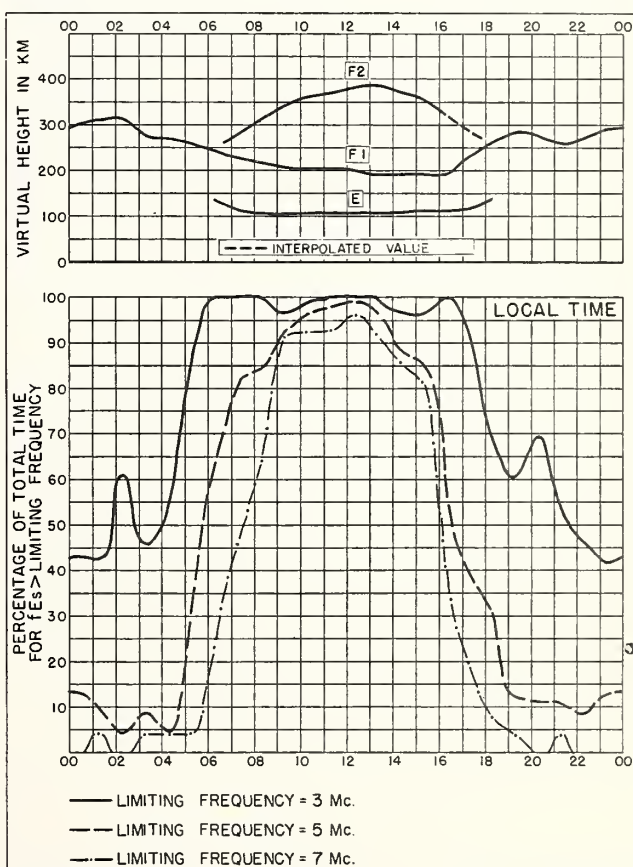


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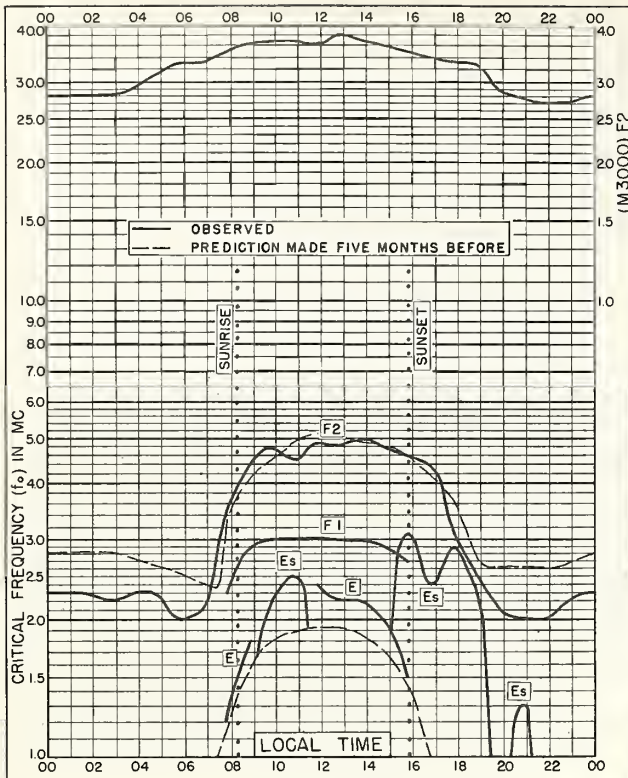


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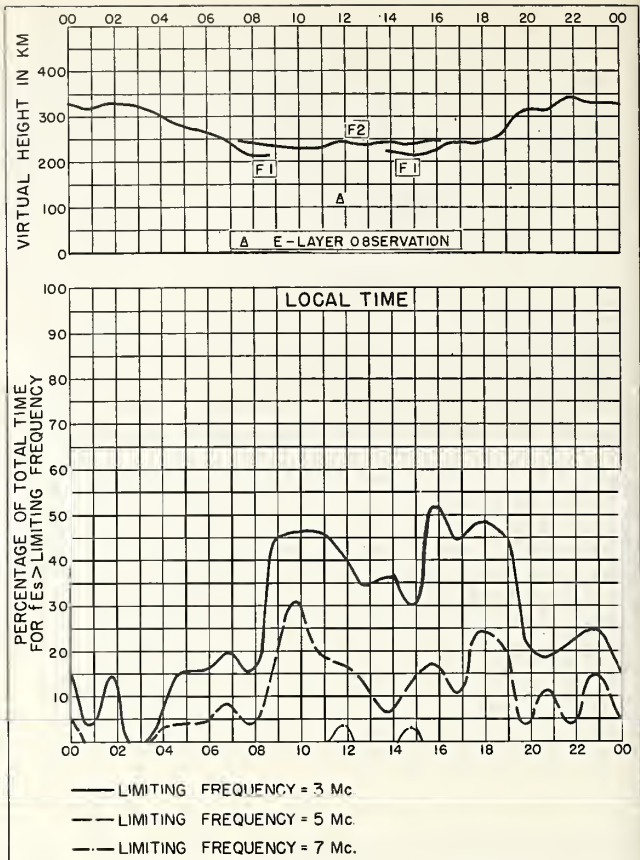


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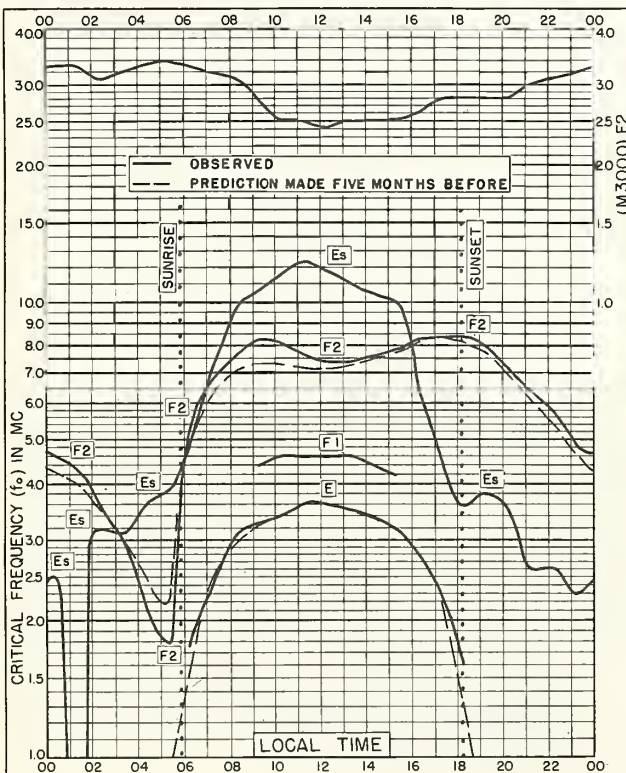


Fig. 115. IBADAN, NIGERIA
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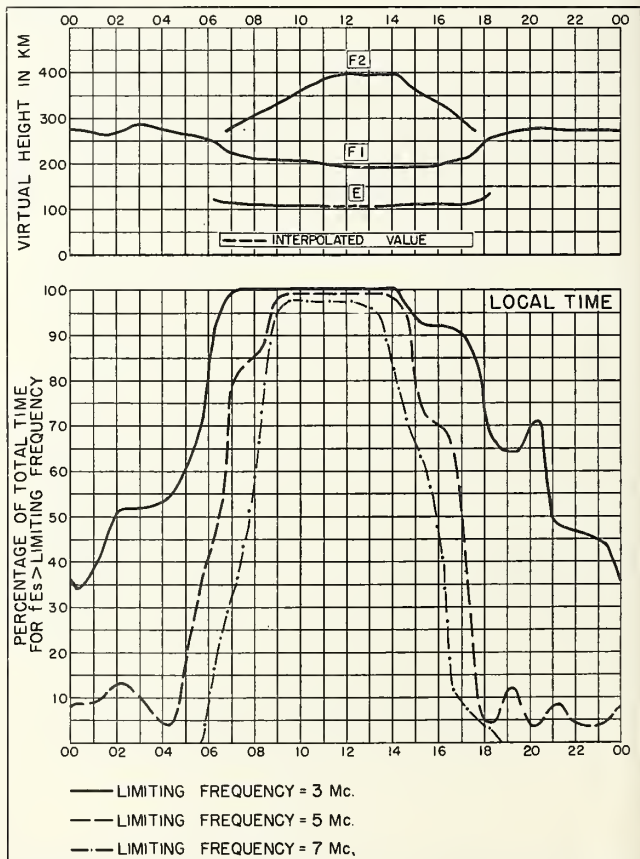


Fig. 116. IBADAN, NIGERIA JULY 1955

NBS 490

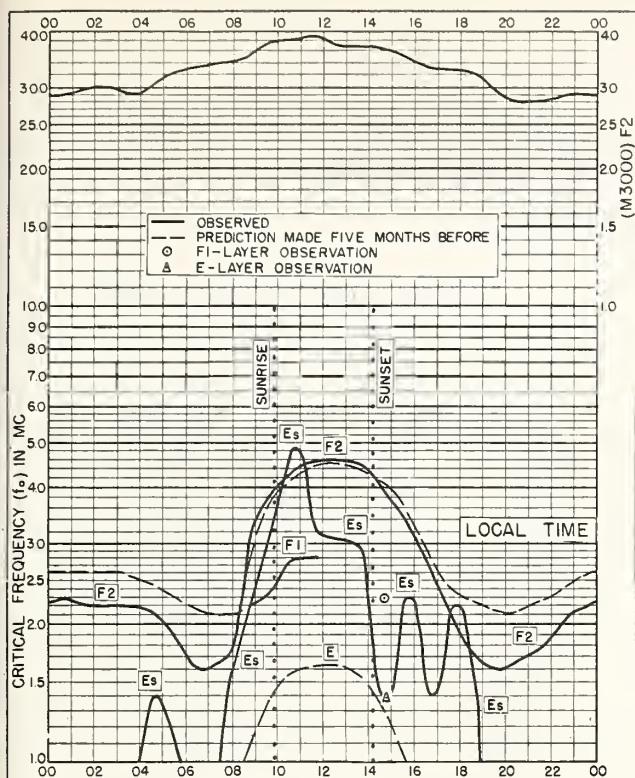


Fig. 117. PORT LOCKROY
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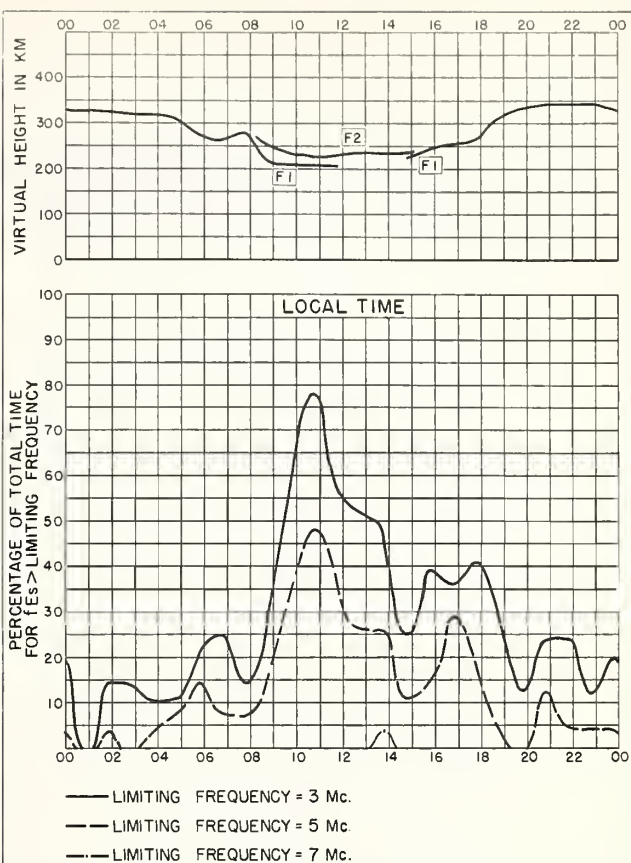


Fig. 118. PORT LOCKROY

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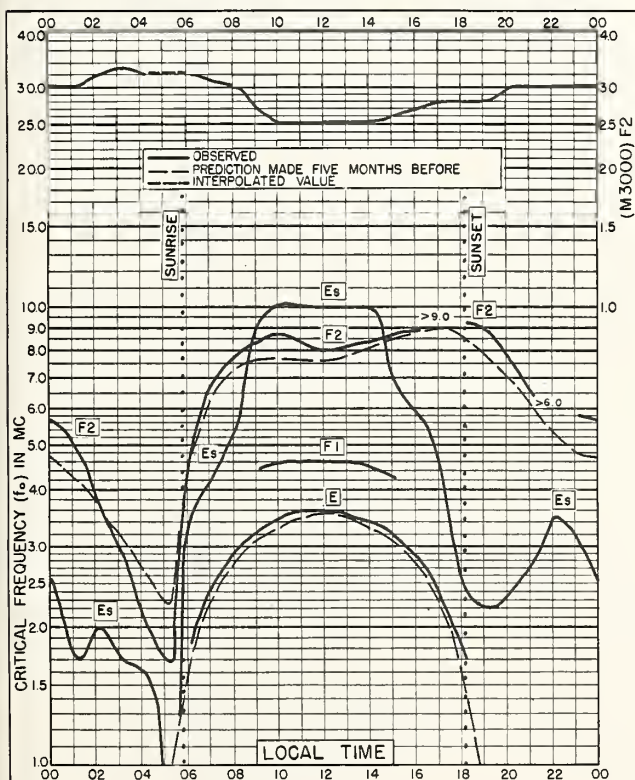


Fig. 119. IBADAN, NIGERIA
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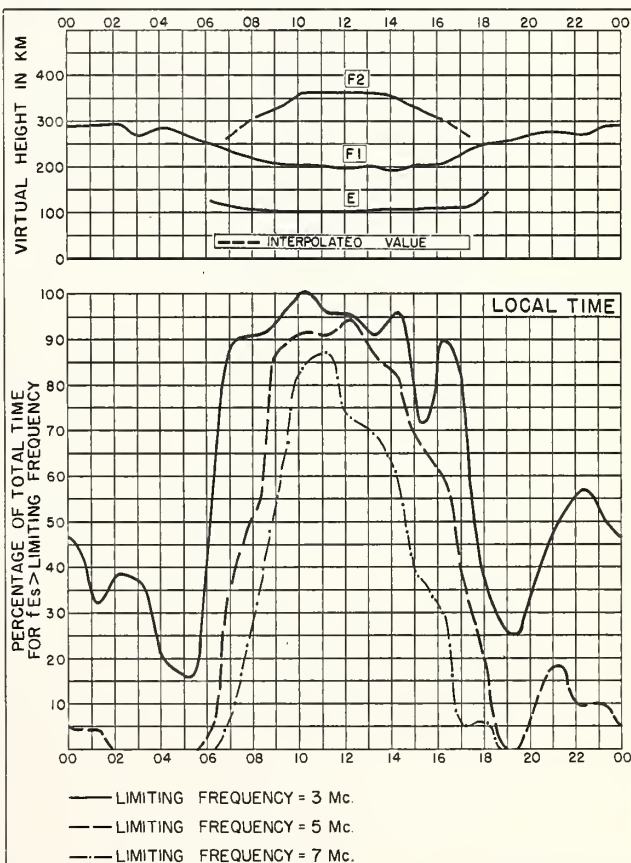


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CRPL Reports

[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11—499—, monthly supplements to TM 11—499; Dept. of the Navy, DNC 13 () series; Dept. of the Air Force, TO 31—3—28 series). On sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.

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Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 Megacycles.

These circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

The publication listed above may be obtained without charge from the Central Radio Propagation Laboratory, unless otherwise indicated.

